

EPAUnited States Environmental Protection Agency
Washington, DC 20460**Work Assignment**

Work Assignment Number

4-04

☐

Other

☐

Amendment Number:

Contract Number

EP-C-13-039

Contract Period 09/11/2013 To 07/31/2018

Base

Option Period Number 4

Title of Work Assignment/SF Site Name

Implementation and Benefits Ac

Contractor

ABT ASSOCIATES INC.

Specify Section and paragraph of Contract SOW

Section VI, Paragraphs 1, 2 and 3

Purpose:

☒

Work Assignment

☐

Work Assignment Close-Out

☐

Work Assignment Amendment

☐

Incremental Funding

☐

Work Plan Approval

Period of Performance

From 08/01/2017 To 07/31/2018

Comments:

Support for 316(b) project.

☐

Superfund

Accounting and Appropriations Data

☒

Non-Superfund

SFO
(Max 2)☐

Note: To report additional accounting and appropriations data use EPA Form 1900-69A.

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

Contract Period:

Cost/Fee:

LOE: 0

09/11/2013 To 07/31/2018

This Action:

250

Total:

250

Work Plan / Cost Estimate Approvals

Contractor WP Dated:

Cost/Fee

LOE:

Cumulative Approved:

Cost/Fee

LOE:

Work Assignment Manager Name Wendy Hoffman

Branch/Mail Code:

Phone Number: 202-564-8794

FAX Number: 202-566-1053

(Signature)

(Date)

Project Officer Name Ahmar Siddiqui

Branch/Mail Code:

Phone Number: 202-566-1044

FAX Number:

(Signature)

(Date)

Other Agency Official Name Nicholas Bisher

Branch/Mail Code:

Phone Number:

FAX Number:

(Signature)

(Date)

Contracting Official Name Noelle Mills

Branch/Mail Code:

Phone Number: 513-487-2171

FAX Number:

(Signature)

(Date)

Contract No. EP-C-13-039
Work Assignment 4-04

I. Title: Implementation and Benefits Activities for the 316(b) Existing Facilities Rule

Contractor: Abt Associates

Contract No.: EP-C-13-039

II. Work Assignment Number: 4-04

III. Estimated Period of Performance: August 3, 2017 to July 31, 2018

IV. Estimated Level of Effort: 250

V. Key EPA Personnel: Work Assignment Contracting Officer Representative (WACOR):

Work Assignment Contracting Officer Representative (WACOR):

Wendy Hoffman
OST/EAD (4303T)
Phone: (202) 564-8794
Fax: (202) 566-1053
Email: hoffman.wendy@epa.gov

Alternate Work Assignment Contracting Officer Representative (WACOR):

James Covington
OST/EAD (4303T)
Phone: (202) 566-1034
Fax: (202) 566-1053
Email: covington.james@epa.gov

VI. Background and Purpose of this Work Assignment

The 1972 Clean Water Act (CWA) directs EPA to develop national technology-based regulations for categories of industries that discharge pollutants directly to surface waters (effluent guidelines) or that discharge pollutants indirectly through sewage treatment plants (pretreatment standards). The CWA also directs EPA to develop national technology-based regulations for new industrial facilities (new source performance standards).

Under Executive Orders 12866 and 13563, EPA is required to estimate the potential benefits and costs to society. As such, the purpose of this Work Assignment (WA) is to provide contract support for work to be performed under WA 4-04, Implementation and Benefits Activities for the 316(b) Existing Facilities Rule, which EPA now refers to as the Cooling Water Intakes Structures Rule. This work assignment includes support for work begun under WAs 1-04 through 3-04, and follows work completed under WA 0-04, Assessment of the Economic Costs and Impacts and Benefits of the Final 316(b) Existing Facilities

Rulemaking, under EPA Contract No. EP-C-13-039. The final 316(b) rule was published in the Federal Register in July 2014. The Engineering and Analysis Division (EAD) is working with the Office of Wastewater Management (OWM), which has primary responsibility for implementing the 316(b) rule, to develop implementation and benefits follow-on activities and tools for use by regulated facilities, permit writers, States and the Regions.

Examples of implementation activities that will be conducted under this WA include assisting other EPA offices within the Office of Water, such as OWM, in responding to economics-related questions they receive about permits and rule implementation from both permit directors and facilities; revising spreadsheet tools the contractor developed under previous WAs 0-04 through 3-04 under this contract to help facilities and permit writers calculate the costs and benefits of various compliance technology options as required under the rule; developing training materials to help State permit directors implement the rule; and, developing outreach materials to help State permit directors assist facilities in preparing the analyses required under the rule. These are only examples of likely Cooling Water Intake Structures implementation activities that will require contractor support.

Under this work assignment, the contractor shall conduct all analyses requiring the collection and manipulation of data and models in accordance with the EPA-approved quality assurance project plan (QAPP) that was based on Task 2 QAPP language. The QAPP shall describe the procedures for assuring the quality of the primary and existing environmental and economic data used for this work assignment.

In carrying out the tasks specified in this work assignment, the contractor may be called upon to build upon and continue work performed under WAs 0-04 through 3-04 under this contract. The work performed under this work assignment shall not duplicate work conducted under the previous work assignments under this contract.

Under the previous work assignments, the contractor performed the following analyses, among others:

- Prepared draft cost calculator;
- Prepared draft benefits calculator;
- Prepared draft Stated Preference Survey Report;
- Prepared a compilation of best practices documents for impingement and entrainment (I&E) sampling design and a set of links to multiple data sources for permit writers for incorporation into the online Cooling Water Intake Structures implementation user guide.

The tasks, estimated LOE, deliverables and schedule for each task are described below.

VII. General Requirements of the Work Assignment and Schedule

Confidential Business Information: During the course of the work assignment, the contractor will be accessing and evaluating CBI. As such, the contractor shall adhere to EPA's CBI policy and other procedures as described in the contract clauses (Clauses H.15-H19 and H.21). The contractor must maintain CBI security clearance to use CBI information. The contractor shall not disclose any CBI to anyone other than EPA without prior written approval from the EPA WACOR. The contractor shall, at all times, adhere to Confidential Business Information (CBI) procedures when handling industry information. The contractor shall manage all reports, documents, and other materials and all draft documents developed under this work assignment in accordance with the procedures set forth in our "Office of

Science and Technology Confidential Business Information Application Security Plan” (August 2011) or its successor approved plans.

Budget Reporting: The contractor under this work assignment is required to report to the EPA WACOR when 80 percent of the total work assignment funding amount has been depleted. The contractor must also report to the EPA WACOR when 80 percent of the approved work plan budget has been depleted.

Identification as Contracting Staff: To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be identified clearly as independent contractors of EPA when participating in events with outside parties and prior to the start of any meeting. Contractor personnel are prohibited from acting as the Agency’s official representative. When speaking with the public, the contractor should refer all interpretations of policy to the EPA.

Limitation of Contractor Activities: The contractor shall submit drafts of all deliverables to the EPA WACOR for review prior to submission of the final product. These drafts will clearly specify the methods, procedures, considerations, assumptions, relevant citations, data sources and data that support any conclusions and recommendations. The contractor will incorporate all EPA WACOR comments into all final deliverables, unless otherwise agreed upon by the EPA WACOR.

Quick Response: Under this Performance Work Statement, the contractor may be required to provide information for use by EPA for quick responses and analyses of options, issues, and policy decisions. Quick responses are those which require completion in one to five working calendar days.

Travel: EPA does not anticipate the need for non-local travel by contractor employees and/or subcontractors to support the scope of this work assignment.

Deliverable Formatting: All memos, draft comments, summaries and responses, and chapters are to be provided in hard copy and in electronic form using Word and/or Excel/Access, ArcView, or, in special cases, another software program agreed to in advance by EPA. Memos are to be written in a manner that will make them easy to turn into draft chapter for the Final Reports. For deliverables that are in Word or pdf versions of Word documents, and that are intended to be shared with EPA management or the public, the contractor shall use decimal align in all tables containing columns of numbers of varying digits, whether or not decimal places are reported. All final materials, e.g., memos, chapters, etc. are to be prepared only after receipt of written technical direction from the EPA WACOR.

Monthly Progress Reports: The monthly progress reports shall include reporting hours and funds spent under this WA on a task-by-task basis, including at the subtask level (e.g. Task 4.1, Task 4.2, etc.), where applicable. The contractor shall include monthly reports of QA work performed as a part of the contract-required monthly financial/technical progress report.

VIII. Performance Work Statement

Task 1 -- Project Management

Estimated LOE: 20 hours

The contractor shall prepare a work plan 15 calendar days after receipt of work assignment signed by the Contracting Officer. The work plan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, a detailed cost estimate by task, and a staffing plan. The EPA WACOR, the Contract-Level Contracting Officer Representative (CL-COR), and the Contracting Officer (CO) will review the work plan. However, only the CO can approve/disapprove, suggest CO. The contractor shall prepare a revised work plan incorporating the CO's comments, if required.

Deliverables and schedule

1. Work plan due 15 calendar days after receipt of work assignment.

A weekly update call with the EPA WACOR will be required for this work assignment to discuss progress on deliverables, costs and other potential issues.

Task 2 - Quality Assurance (QA)

Estimated LOE: 10 hours

2.1 Background

QAPPs are required under the Agency's Quality Assurance Policy CIO-2105, formerly EPA Order 5360.1 A2 (May 2000), and implementing guidance CIO-2105-P-01-0 (May 2000). All projects that involve the generation, collection, analysis, and use of environmental data must have an approved QAPP in place prior to the commencement of the work. Examples of these environmental data operations are provided in Table 2.1 below.

Table 2.1. Examples of work that involves the collection, generation, evaluation, analysis, or use of environmental data

Item	Examples
Data	Includes field sampling information (sample location information, flow measurements, temperature, pH, physical observations, etc.), laboratory measurements (e.g., chemical, physical, biological, radiological measurements), data collected from questionnaires, economic data, census data, and any other types of existing data (i.e., data generated for a different purpose or generated by a different organization)
Data generation	Includes field studies, laboratory studies, and generation of modeling output
Data collection	Includes field surveys, questionnaire surveys, literature searches, and third party data
Data evaluation	Includes data inspection, review, assessment, and validation
Data analysis	Includes statistical, engineering, and economic analysis, and testing, evaluation, and validation of methods and models; database creation, data extraction, and data manipulation
Data Use	Any use of data to support EPA decisions, regulations, policy, publications, or tools (including effluent guidelines, 304(m) program, standards, environmental assessments, and models, tools, or reports disseminated by EPA to assist other organizations in implementing environmental programs)

Note that QAPPs are required for the development or revision of models and software that support the generation, collection, evaluation, analysis, or use of data. (A model is set of equations and assumptions used to predict unknown data.) When existing models are used as a tool to generate or evaluate data, the project QAPP must describe the model and explain how it will be used and how its output will be evaluated to ensure the modeling effort meets the overall quality objectives for the project. Development or revision of new models also must be supported by a QAPP that describes the objectives for the model, the quality criteria that will be applied to the model, and the procedures for evaluating whether the model meets those criteria.

2.2 QA Project Plan Requirements

The contractor has previously prepared a contract-wide Programmatic QAPP (PQAPP) for Contract EP-C-13-039. This PQAPP describes, in a single document, information that is not site or time-specific, but applies throughout the program (i.e., the duration of the contract). When tasked with preparing the PQAPP, the contractor was informed that the PQAPP may need to be supplemented with project-specific details to support individual work assignments that involve the collection, generation, evaluation, analysis, or use of environmental data.

The activities in this work assignment involve gathering, evaluating, analyzing, and otherwise using existing environmental data (also known as “secondary” use of data). However, EPA has determined that the contractor is operating under the existing PQAPP and that the PQAPP addresses QA requirements for this work assignment. In support of this work assignment, the contractor shall ensure that the work plan provides enough detail to clearly describe:

- Specific objectives of the project(s) supported by this work assignment, including typical questions that must be answered when the contractor is using existing sources of data to perform economic analyses in support of EPA’s implementation activities under the final Cooling Water Intake Structures rule;
- The type of data to be gathered or used under this work assignment to support the project objectives—including data from search engines, federal databases, EPA data bases—as well as a rationale for when those databases are appropriate and what data available in each will support the project;
- The quality objectives needed to ensure the data will support the project objectives; and,
- The quality assurance/quality control (QA/QC) activities to be performed to ensure that any results obtained are documented and are of the type, quality, transparency, and reproducibility needed.

Table 1 in the Appendix at the end of this WA contains the EAD Checklist for this project, which utilizes existing data. The table demonstrates how the PQAPP addresses QA requirements for this work assignment. The contractor shall use the same PQAPP Table 2 issued in the previous WA 3-04. The contractor shall update, if necessary, and fill in staff roles in the table in the ‘explanatory comments’ under A.4 and make any additional detailed notes in the explanatory comments column if details of the previous Table 2 has changed. The contractor shall then include the completed table as a separate Appendix A to the work plan upon submittal to EPA. This Appendix A should be a stand-alone document if QA documentation is requested. Therefore, the table title must include the title of the WA, WA number, and contract number. The WACOR has provided this information in the title, which the contractor may use to fulfill this requirement.

2.3 Additional QA Documentation Required

The EPA Quality Manual for Environmental Programs (CIO 2105-P-01-0, May 2000) requires published Agency reports containing environmental data to be accompanied by a readily identifiable section or appendix that discusses the quality of the data and any limitations on the use of the data with respect to their originally intended application. The EPA Quality Manual further requires Agency reports to be reviewed by the QA manager (or other authorized official) before publication to ensure that an adequate discussion of QA and QC activities is included. The purpose of the review is to ensure that the reports provide enough information to enable a knowledgeable reader to determine whether the technical and quality goals were met for the intended use of the data. Reports should include applicable statements regarding the use of any environmental data presented as a caution about possible misuse of the data for other purposes. For example, a Technical Support Document or Study Report must include a clear discussion of the quality management strategies (including the project goals and objectives, quality objectives and criteria, and QA/QC practices) that were employed to control and document the quality of data generated and used. These documents should also discuss any deviations from procedures documented in the EPA-approved QAPP(s) supporting the project, the reasons for those deviations, any impact of those deviations had on data quality, and steps taken to mitigate data quality issues.

In support of this Agency requirement, all major deliverables (e.g., Technical Support Documents, Study Reports, Analytical Methods) produced by the contractor under this work assignment must include a discussion of the QA/QC activities that were performed to support the deliverable. This discussion must provide a sufficient level of detail to allow the EAD QA Coordinator (or designee) to determine whether the QA/QC strategies implemented for the project sufficiently support the intended use of the data. Upon receipt, the EPA WACOR will review each applicable report and certify whether the contractor has adhered to the QA requirements documented in the contractor's PQAPP.

The contractor also shall provide EPA with monthly reports of QA activities performed during implementation of this work assignment. These monthly QA reports shall identify QA activities performed to support implementation of this work assignment, problems encountered, deviations from the QAPP, and corrective actions taken. If desired, the contractor may include this report as a part of the contract-required monthly financial/technical progress report.

2.4 Data Quality Act/Information Quality Guidelines Requirements

The Data Quality Act (also known as the Information Quality Act) requires EPA to ensure that influential information disseminated by the Agency is sufficiently transparent in terms of data and methods of analysis so that the information is capable of being substantially reproduced. To support compliance with these data transparency/data reproducibility requirements, EPA plans to include QAPPs as part of any rulemaking record documentation to be made available to the public. (This includes PQAPPs and SQAPPs.) The contractor may claim information in QAPPs as confidential; if the contractor chooses to do so, the contractor shall submit a sanitized (i.e., public) version and an unsanitized (i.e., confidential) version at the time the QAPP is submitted for approval by EPA. The sanitized version shall be included in the public docket for the applicable rulemaking (or other docket record), and the unsanitized version shall be included in a non-public (i.e., confidential) portion of the docket (or record).

Information contained in the approved QAPP shall be transparent and reproducible and meet the requirements of the Data Quality Act for influential information. EPA's *Guidelines for Ensuring and*

Maximizing the Quality, Objectivity, Utility, and Integrity, of Information Disseminated by the Environmental Protection Agency (EPA/260R-02-008, October 2002), referred to as “EPA’s Information Quality Guidelines,” describe EPA procedures for meeting Data Quality Act requirements. Section 6.3 of EPA’s Information Quality Guidelines indicate that “especially rigorous robustness checks” should be applied in circumstances where quality-related information cannot be disclosed due to confidentiality issues. Where applicable, the contractor should indicate which results were obtained using the tools (standard operating procedures (SOPs), checklists, and guidelines) that the contractor designates as confidential so that the EPA WACOR can easily identify the areas that require rigorous robustness checks and document that those checks have been performed. At the discretion of the EPA WACOR, the contractor may be requested to prepare pre-dissemination review checklist as described in Section 5.5 of the Office of Water Quality Management Plan, February 2009. If this is required, the EPA WACOR will notify the contractor through written technical direction.

Deliverables and schedule

1. Monthly reports of QA work performed (shall be included in contractor’s monthly progress report) due monthly throughout the WA period of performance.

Task 3 - Adherence to the Standardized Naming Convention and Version Control

The contractor shall adhere to the EPA WACOR-approved standardized naming convention and version control (SNCVC) plan which was developed under the Construction and Development WA 0-01 of Contract EP-C-07-023 (WA0-01_T1_SNCVC_08.31.07_V1.pdf). The contractor shall use this standardized convention for all deliverables associated with this work assignment.

Task 4 - Economics Support for Cost-Related Cooling Water Intake Structures Rule Implementation Activities

Estimated LOE for Task 4: 115 hours

Under this task, the contractor shall provide analytical and other cost-related economics support to EPA for a variety of cost-related Cooling Water Intake Structures Rule implementation activities. Examples of these activities include revisions to the cost calculator, including the user manual (also called documentation) as requested by the EPA WACOR; support to develop responses to cost-related questions in EPA’s Cooling Water Intake Structures Rule implementation questions and answers (Q&A) database for permit writers and facilities; and, support for additional cost-related implementation activities such as testing, outreach, and training in the use of the cost calculator for EPA regions, states and facilities.

4.1 Completion of Cost Calculators and Workbook for Implementation Support

The contractor largely completed work on the cost calculator under the previous WAs 2-04 and 3-04. The remaining work to be done under WA 4-04 consists primarily of responding to EPA WACOR requests to revise the cost calculator and user manual based on comments from EPA headquarters and regional staff, and outside third parties whom EPA has requested review and comment on the calculator.

The calculator, which is in Excel file/workbook format, shall be downloadable from the EPA website or accessible on-line. It will NOT be web-based. The companion benefits calculator task and activities are

described under Task 5.1.

Deliverables and Schedule

4.1a. Final draft cost calculator and user manual with draft responses to EPA WACOR comments are due three weeks after receipt of comments from the EPA WACOR, but no later than December 1, 2017, including the draft final user manual.

4.1b. Final cost calculator and user manual are due three weeks after receipt of follow-up comments from the EPA WACOR, but no later than July 31, 2018.

4.2. Support for Additional Cost-Related Implementation Activities

The contractor shall provide additional cost-related support for implementation of the Cooling Water Intake Structures Rule. The EPA WACOR expects this support to fall under three general categories:

4.2.a. Responding to management questions about cost-related implementation issues and preparing briefing and meeting materials which may include, but not be limited to, short briefing documents and PowerPoint presentations. The contractor may also be directed to review analyses conducted by EPA and its contractors, and provide technical review of materials prepared by Agency staff. Examples of deliverables include developing quick turnaround analyses, preparing webinar materials for webinars with permit writers and/or facilities, and developing briefing materials on cost-related issues.

4.2.b. Testing, outreach and training activities using the cost calculator for various audiences, including EPA headquarters and regional staff, State Clean Water Agencies, stakeholders from industry and environmental organizations, and the regulated facilities. Examples of deliverables include outreach and training materials for the calculator, including webinars and tutorials on the use of the calculators, and draft and final webpages on the calculators for the EPA web site.

4.2.c Prepare draft responses to economics-related questions from permit writers, facilities, and other stakeholders for the Q&A database which EPA is developing with support from OWM's contractor. The Q&A database responses may take the form of a brief response of less than one page or may take the form of essays or analyses, no longer than three pages, that give a conceptual background on the issues, describe the methodology for calculations and estimates, and outline the key points from the analyses and their role in permit writers' decisions. The EPA WACOR will provide the materials the contractor develops under the Q&A activity to the EPA staff in the Office of Science and Technology (OST) and OWM responsible for maintaining the database to incorporate into the Q&A database.

Deliverables and Schedule

4.2a. Draft deliverables are due two weeks after receipt of technical direction from the EPA WACOR. The EPA WACOR will provide written comments. Draft quick turnaround deliverables are due one week after requested by technical direction from the EPA WACOR.

4.2b. Final deliverables incorporating comments from the EPA WACOR are due two weeks after receipt of comments from the EPA WACOR, but no later than December 31, 2017. Final quick turnaround deliverables are due one week after receipt of comments from the EPA WACOR but no later than July 31, 2018.

Task 5 – Support for Benefits-Related Implementation Activities

Estimated LOE: 105 hours

Under this task, the contractor shall provide analytical and other economics and environmental assessment-related support to EPA for a variety of Cooling Water Intake Structures rule implementation activities related to benefits issues. Examples of these activities include revisions to the benefits calculator, including the user manual (also called documentation); and, support for other benefits-related implementation activities, including support to develop responses to benefits-related questions for EPA's Cooling Water Intake Structures rule implementation Q&A database for permit writers and facilities; and testing, outreach, and training in the use of the benefits calculator for EPA Regions, States and facilities.

5.1 Completion of Benefits Calculator and Workbook for Implementation Support

The contractor largely completed work on the benefits calculator and user manual under the previous WAs 2-04 and 3-04. Remaining work on the benefits calculator to be performed under WA 4-04 consists primarily of responding to EPA WACOR requests to revise the benefits calculator and user manual based on comments from EPA headquarters and regional staff, and any outside third parties whom EPA has requested review and comment on the calculator.

Deliverables and Schedule

5.1a. Final draft benefits calculator and user manual with draft responses to EPA WACOR comments are due three weeks after receipt of final comments from the EPA WACOR, but no later than December 1, 2017, including the draft final user manual.

5.1b. Final benefits calculator and user manual are due three weeks after receipt of follow-up comments from the EPA WACOR, but no later than July 31, 2018.

5.2. Support for Additional Benefits-Related Implementation Activities

The contractor shall provide additional benefits-related support for implementation of the Cooling Water Intake Structures rule. The EPA WACOR expects this support to fall under three general categories:

5.2a. Responding to management questions about benefits-related implementation issues and preparing briefing and meeting materials which may include, but not be limited to, short briefing documents and PowerPoint presentations. The contractor may also be directed to review analyses conducted by EPA and its contractors, and provide technical review of materials prepared by Agency staff. Examples of deliverables include developing quick turnaround analyses, preparing webinar materials for webinars with permit writers and/or facilities, and developing briefing materials on cost-related issues. The contractor may also be directed to address EPA comments on the stated preference survey report, which the contractor prepared under WA 6-05 of EP-C-07-023.

5.2b. Testing, outreach and training activities using the benefits calculator for various audiences, including EPA headquarters and regional staff, State Clean Water Agencies, stakeholders from industry and environmental organizations, and the regulated facilities. Examples of deliverables include outreach and training materials for the calculator, including webinars and tutorials on the use of the calculators, and draft and final webpages on the calculators for the EPA web site. Also, prepare responses to benefits-related questions from permit writers, facilities, and other stakeholders for the EPA's Q&A database.

Responses may take the form of a brief response of less than one page or brief essays or analyses, no longer than three pages. The EPA WACOR will provide the materials the contractor develops under the Q&A activity to OWM's contractor, which will incorporate them into the Q&A database.

5.2.c Prepare draft responses to benefits-related questions from permit writers, facilities, and other stakeholders for the Q&A database which EPA is developing with support from OWM's contractor. The Q&A database responses may take the form of a brief response of less than one page or may take the form of essays or analyses, no longer than three pages, that give a conceptual background on the issues, describe the methodology for calculations and estimates, and outline the key points from the analyses and their role in permit writers' decisions. The EPA WACOR will provide the materials the contractor develops under the Q&A activity to the EPA staff in OST and OWM responsible for maintaining the database to incorporate into the Q&A database.

Deliverables and Schedule

5.2a. All draft deliverables are due three weeks after receipt of technical direction from the EPA WACOR. The EPA WACOR will provide written comments. Quick turnaround deliverables are due one week after requested by technical direction from the EPA WACOR.

5.2b. Final deliverables incorporating comments from the EPA WACOR are due two weeks after receipt of comments from the EPA WACOR, but no later than July 31, 2018. Final quick turnaround deliverables are due one week after receipt of comments from the EPA WACOR, but no later than July 31, 2018.

SCHEDULE OF DELIVERABLES

Task	Deliverable	Delivery Schedule
Task 1 – Prepare Work Plan		
1	Prepare work plan	Due 15 calendar days after WA receipt.
Task 2 -- Adherence to the Quality Assurance Project Plan		
2	Monthly reports of QA work performed	To be included in monthly progress reports.
Task 3 -- Adherence to the Standardized Naming Convention and Version Control (SNCVC)		
		No deliverable for this task.
Task 4 – Economics Support for Cost-related 16(b) Implementation Activities		
4.1a	Final draft cost calculator, including draft user manual.	Due three weeks after receipt of final comments from the EPA WACOR, but no later than December 31, 2017.
4.1b	Final cost calculator and user manual.	Due three weeks after receipt of follow-up comments from EPA WACOR, but no later than July 31, 2018.
4.2a	Draft final deliverables for additional cost-related implementation support activities	Due two weeks after receipt of written technical direction from the EPA WACOR. Quick turnaround deliverables are due one week after requested by written technical direction from the EPA WACOR, but no later than July 31, 2018.

4.2b	Final deliverables incorporating comments from the EPA WACOR	Due two weeks after receipt of comments from the EPA WACOR, but no later than July 31, 2018. Quick turnaround deliverables are due one week after receipt of comments from the EPA WACOR, but no later than July 31, 2018.
Task 5 – Support for Benefits-Related Implementation Activities		
5.1a	Final draft benefits calculator, including draft user manual.	Due one month after receipt of final comments from the EPA WACOR, but no later than December 31, 2017.
5.1b	Final benefits calculator and user manual.	Due three weeks after receipt of follow-up comments from EPA WACOR, but no later than July 31, 2018.
5.2a	Draft final deliverables for additional benefits-related implementation support activities	Due two weeks after receipt of written technical direction from the EPA WACOR. Quick turnaround deliverables are due one week after receipt of written technical direction from the EPA WACOR, but no later than July 31, 2018.
5.2b	Final deliverables incorporating comments from the EPA WACOR	Due two weeks after receipt of comments from the EPA WACOR, but no later than July 31, 2018. Quick turnaround deliverables are due one week after receipt of comments from the EPA WACOR, but no later than July 31, 2018.

Appendix 1

EAD Checklist for WAs 1-04 through -04, Implementation and Benefits Activities for the 316(b) Existing Facilities Rule, Contract EP-C-13-039

The items noted in this checklist are adapted from those elements found in *EPA Requirements for QA Project Plans (QA/R-5)* (EPA, 2001a), but tailored to the use of existing data.

Table 1. EAD Checklist for WAs 1-04 through 4-04 Utilizing Existing Data

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
A1. Title & Approval Sheet							
Project title	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
Organization's name	X		X				See above
Effective date and/or version identifier	X		X				See above
Dated signature of Organization's project manager	X		X				See above
Dated signature of Organization's QA manager	X		X				See above
Other signatures, as needed (e.g., EAD Project Officer, EAD QA Coordinator)	X		X				See above
Revision History	X		X				See above
A2. Table of Contents							
Includes sections, figures, tables, references, and appendices	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
Document control information indicated (when required by the EPA Project Manager and QA Manager)		X					See above
A3. Distribution List							
Includes all individuals who are to implement or otherwise receive the QAPP and identifies their organization	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
A4. Project/Task Organization							
Identifies key individuals with their responsibilities (e.g., data users, decision makers, project QA manager, Subcontractors, etc.) and contact info.	X		X				PQA Completed updated Checklist must be attached to work plan, including name of project QA manager.
Organization chart shows lines of authority & reporting responsibilities	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
Project QA manager position indicates independence from unit collecting/using data	X		X				See above
A5. Problem Definition/Background							
Clearly states problem to be resolved, decision to be made, or hypothesis to be tested	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
Identifies project objectives or goals	X		X				See above
Historical & background information		X					See above
Cites applicable technical, regulatory, or program-specific quality standards, criteria, or objectives	X		X				See above
A6. Project/Task Description							
List measurements to be made/data to obtain	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
Notes special personnel or equipment requirements		X					See above
Provides work schedule		X					See above
A7. Overall Quality Objectives & Criteria							
States overall quality objectives and limits needed to support the project goals and objectives cited in Element A5.	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
A8. Special Training Requirements/ Certifications							
Identifies specialized skills, training or certification requirements	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
Discusses how this training will be provided/the necessary skills will be assured and documented	X		X				See above
A9. Project-level Documents & Records							
Describes process for distributing the approved QAPP and other planning documents (and updates) to staff	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
Identifies final work products that will result from the project	X		X				See above
Describes the process for developing, reviewing, approving, and disseminating the final work products and individuals responsible for these processes	X		X				See above
B1. Data Needs							
Detailed list/description of the specific data elements needed to support project goals	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
Description of the scope of the data elements that you need (e.g., data supporting specific treatment options vs. the full range of options, data supporting the entire country vs. a specific geographic region)	X		X				See above
If project includes development or update of a project database, QAPP identifies and defines each database field		X					See above
B2. Potential Data Sources							
Identifies and describes potential sources of the existing data needed (e.g., photographs, topographical maps, facility or state files, census data, meteorological data, publications, etc.) and the rationale for their use	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
If literature searches are used, describes the search engines that will be used and key search terms	X		X				See above
If databases or models will be used, describe the database (or model) in terms of who developed it and operates it and the type of data it contains	X		X				See above
For other potential sources, describe the potential sources and rationale for considering or using each one	X		X				See above
B3. Criteria for Selecting Data Sources							
Identifies each criterion that will be used to determine if the candidate data sources listed in B2 will meet your needs, and how each criterion is defined. (Criteria vary by project; examples include reliability, age, applicability, quantity, format, and others)	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
Explains rating system used to evaluate source against each criterion	X		X				See above
B4. Data Value Selection Approach							
For data sources that meet the criteria identified in B3: Describes the criteria and procedures that will be used to determine which value(s) identified in the acceptable sources are most appropriate for use in the project	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
For data that do not meet these pre-established criteria but are the only data available, explains how the decision to use such data will be made and documented	X		X				See above
B5. Resolving Data Gaps							

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
Describes the process for identifying and addressing data gaps that still exist after candidate data sources have been evaluated and appropriate data values have been identified	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
Describes the process that will be used to address any new data needs revealed during the data gathering process (i.e., additional data elements not previously considered)	X						See above
B6. Data Gathering Documentation and Records							
Describes how results of the source selection and the data value selection will be documented, including any sources or values that were rejected and the rationale for not using them	X		X				See above
For data that are deemed acceptable and that will be used, explains how each data element will be associated to its original source citation (i.e., bibliographic information, telephone contact reports, email messages, etc.)	X		X				See above

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
C1. Standardization of Data Elements							
Describes the process to ensure that units and other key measures are captured and standardized (or otherwise made comparable) in the database	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
If the project requires that all fields be standardized to a single set of units (e.g., US dollars for economic data, ug/L for chemical data), identifies the standard units that will be required for each data element	X		X				See above
Identifies the procedures for converting data reported in other units to the standardized units, including any rounding or truncating procedures, and procedures for ensuring these conversions are performed correctly	X		X				See above
If standardization of data elements is not needed, explains the process for ensuring that data presented in varying units are comparable enough for use in the project and that project staff members and other data users will be able to readily identify differences in units	X		X				See above
C2. Data Entry							
Explains the process for manually entering selected data into the project database, who will be responsible for such data entry, and the QC strategies that will be used to ensure that the database accurately and completely captures the data as presented in the original source	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
C3. Merging or Uploading Electronic Data from Existing Sources							
If data are available electronically and will be uploaded or merged into the project database: describes the procedures that will be followed to ensure that errors are not introduced during the upload/merge process and that the final database reflects the original dataset(s)	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
C4. Data Review							
Describes the process for ensuring that the data have been recorded, transmitted, and processed correctly	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
C5. Data Storage and Manipulation							
Describes how the existing data will be stored	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
Describes who will be responsible for access to and maintenance of the stored data	X		X				See above
Describes how the existing data will be incorporated with other project data to support the project goal/decision to be made	X		X				See above
Describes the QC strategies that will be employed to ensure that the integrity of the data is not compromised during data storage, access/retrieval, updates, or other manipulation	X		X				See above

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
D1. Data Quality Verification and Data Quality Reporting							
Describes the process for verifying that the final set of data meets the overall criteria originally specified for the project	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
Describes how these determinations will be documented and reported.	X		X				See above
For data that don't meet the pre-established specifications, explains the process for determining if they are usable and how such decisions will be documented	X		X				See above
D2. Use/Analysis of the Existing Data							
Provides details regarding the exact means in which the data will be used to meet project objectives	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
Includes an explanation or list of the information to be calculated and the data elements that will be used to make those calculations	X		X				See above
Includes applicable calculations and equations (if known) or explanations of how they will be developed.	X		X				See above
Includes plans for excluding outliers.	X		X				See above
D3. Methodology Documentation and Conceptual Review							

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
If exact methodologies for analyzing the data will need to be developed or modified during the course of data analysis, explains the process by which such methodologies will be documented, who is responsible for reviewing/ approving their use, and how the methodologies will be checked to ensure they yield the desired products	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
D4. Technical Review of the Data Analysis							
Describes activities that will be used to ensure the data analyses are being implemented as specified and will support project objectives	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
Explains procedures for identifying and notifying appropriate personnel if changes to the originally planned procedures are warranted, and the process for approving, documenting and implementing such changes	X		X				See above
D5. Final Verification of Data Analysis and Reconciliation with User Requirements							
Describes the process for reviewing the final work product to ensure that the work was generated in accordance with the QAPP, and that the work product addresses the overall project goals and objectives	X		X				See Appendix 2, EAD Checklist for Projects Utilizing Existing Data
Describes how the results of this assessment will be documented	X		X				See above
Describes how any limitations of the data or data analyses that were used to prepare the final work product will be documented and communicated	X		X				See above

Appendix 2

EAD Checklist for Projects Utilizing Existing Data

The items noted in this checklist from WA 1-04 are adapted from those elements found in *EPA Requirements for QA Project Plans (QA/R-5)* (EPA, 2001a), but tailored to the use of existing data.

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
A1. Title & Approval Sheet							
Project title	X		X				Page #s refer to the PQAPP - Page ii
Organization's name	X		X				Page ii
Effective date and/or version identifier	X		X				Page ii
Dated signature of Organization's project manager	X		X				Page ii
Dated signature of Organization's QA manager	X		X				Page ii
Other signatures, as needed (e.g., EAD Project Officer, EAD QA Coordinator)	X		X				Page ii
Revision History	X		X				Page ii
A2. Table of Contents							
Includes sections, figures, tables, references, and appendices	X		X				Page iv
Document control information indicated (when required by the EPA Project Manager and QA Manager)		X					
A3. Distribution List							

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
Includes all individuals who are to implement or otherwise receive the QAPP and identifies their organization	X		X				Page iii
A4. Project/Task Organization							
Identifies key individuals with their responsibilities (e.g., data users, decision makers, project QA manager, Subcontractors, etc.) and contact info.	X		X				Pages 5 - 9
Organization chart shows lines of authority & reporting responsibilities	X		X				Page 5
Project QA manager position indicates independence from unit collecting/using data	X		X				Pages 5, 7 - 9
A5. Problem Definition/Background							
Clearly states problem to be resolved, decision to be made, or hypothesis to be tested	X		X				Pages 9 - 10
Identifies project objectives or goals	X		X				Page 12 -14
Historical & background information		X					
Cites applicable technical, regulatory, or program-specific quality standards, criteria, or objectives	X		X				Pages 9 - 14
A6. Project/Task Description							
List measurements to be made/data to obtain	X		X				Pages 14 - 15
Notes special personnel or equipment requirements		X					
Provides work schedule		X					Work schedule provided in WA
A7. Overall Quality Objectives & Criteria							
States overall quality objectives and limits needed to support the project goals and objectives cited in Element A5.	X		X				Pages 16 - 22
A8. Special Training Requirements/ Certifications							

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
Identifies specialized skills, training or certification requirements	X		X				Pages 22- 23
Discusses how this training will be provided/the necessary skills will be assured and documented	X		X				Pages 22-23
A9. Project-level Documents & Records							
Describes process for distributing the approved QAPP and other planning documents (and updates) to staff	X		X				Page 23
Identifies final work products that will result from the project	X		X				Page 24
Describes the process for developing, reviewing, approving, and disseminating the final work products and individuals responsible for these processes	X		X				Pages 24-26
B1. Data Needs							
Detailed list/description of the specific data elements needed to support project goals	X		X				Pages 27 - 39
Description of the scope of the data elements that you need (e.g., data supporting specific treatment options vs. the full range of options, data supporting the entire country vs. a specific geographic region)	X		X				Pages 27 - 39
If project includes development or update of a project database, QAPP identifies and defines each database field		X					

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
B2. Potential Data Sources							
Identifies and describes potential sources of the existing data needed (e.g., photographs, topographical maps, facility or state files, census data, meteorological data, publications, etc.) and the rationale for their use	X		X				Pages 40
If literature searches are used, describes the search engines that will be used and key search terms	X		X				Pages 40 - 41
If databases or models will be used, describe the database (or model) in terms of who developed it and operates it and the type of data it contains	X		X				Pages 41 - 44
For other potential sources, describe the potential sources and rationale for considering or using each one	X		X				Pages 40 - 42
B3. Criteria for Selecting Data Sources							
Identifies each criterion that will be used to determine if the candidate data sources listed in B2 will meet your needs, and how each criterion is defined. (Criteria vary by project; examples include reliability, age, applicability, quantity, format, and others)	X		X				Pages 45 - 48
Explains rating system used to evaluate source against each criterion	X		X				Pages 45 - 48
B4. Data Value Selection Approach							

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
For data sources that meet the criteria identified in B3: Describes the criteria and procedures that will be used to determine which value(s) identified in the acceptable sources are most appropriate for use in the project	X		X				Pages 48-49
For data that do not meet these pre-established criteria but are the only data available, explains how the decision to use such data will be made and documented	X		X				Page 49
B5. Resolving Data Gaps							
Describes the process for identifying and addressing data gaps that still exist after candidate data sources have been evaluated and appropriate data values have been identified	X		X				Pages 49
Describes the process that will be used to address any new data needs revealed during the data gathering process (i.e., additional data elements not previously considered)	X						This is not covered in the PQAPP. If the need arises to add data elements not previously considered, the EPA WACOR will consult with the contractor to ensure that the contractor adheres to same quality procedures followed for previously considered data elements.
B6. Data Gathering Documentation and Records							
Describes how results of the source selection and the data value selection will be documented, including any sources or values that were rejected and the rationale for not using them	X		X				Pages 49 -51 and page 53 Note – in cases where sources or values were rejected, the EPA WACOR will have the contractor document reasons for rejection.

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
For data that are deemed acceptable and that will be used, explains how each data element will be associated to its original source citation (i.e., bibliographic information, telephone contact reports, email messages, etc.)	X		X				Page 50 – 51

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
C1. Standardization of Data Elements							
Describes the process to ensure that units and other key measures are captured and standardized (or otherwise made comparable) in the database	X		X				Pages 51 – 52
If the project requires that all fields be standardized to a single set of units (e.g., US dollars for economic data, ug/L for chemical data), identifies the standard units that will be required for each data element	X		X				Page 52
Identifies the procedures for converting data reported in other units to the standardized units, including any rounding or truncating procedures, and procedures for ensuring these conversions are performed correctly	X		X				Page 52
If standardization of data elements is not needed, explains the process for ensuring that data presented in varying units are comparable enough for use in the project and that project staff members and other data users will be able to readily identify differences in units	X		X				Page 53 Note -- If standardization of data elements is not needed, the EPA WACOR will ensure that contractor explains the process for ensuring that data presented in varying units are comparable enough for use in the project and that project staff members and other data users will be able to readily identify differences in units.
C2. Data Entry							
Explains the process for manually entering selected data into the project database, who will be responsible for such data entry, and the QC strategies that will be used to ensure that the database accurately and completely captures the data as presented in the original source	X		X				Page 52

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
C3. Merging or Uploading Electronic Data from Existing Sources							
If data are available electronically and will be uploaded or merged into the project database: describes the procedures that will be followed to ensure that errors are not introduced during the upload/merge process and that the final database reflects the original dataset(s)	X		X				Pages 52 – 53
C4. Data Review							
Describes the process for ensuring that the data have been recorded, transmitted, and processed correctly	X		X				Page 53
C5. Data Storage and Manipulation							
Describes how the existing data will be stored	X		X				Page 53 – 54
Describes who will be responsible for access to and maintenance of the stored data	X		X				Page 53 – 54
Describes how the existing data will be incorporated with other project data to support the project goal/decision to be made	X		X				Pages 53 – 54
Describes the QC strategies that will be employed to ensure that the integrity of the data is not compromised during data storage, access/retrieval, updates, or other manipulation	X		X				Pages 53 – 54

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
D1. Data Quality Verification and Data Quality Reporting							
Describes the process for verifying that the final set of data meets the overall criteria originally specified for the project	X		X				Page 54
Describes how these determinations will be documented and reported.	X		X				Page 54
For data that don't meet the pre-established specifications, explains the process for determining if they are usable and how such decisions will be documented	X		X				Page 54
D2. Use/Analysis of the Existing Data							
Provides details regarding the exact means in which the data will be used to meet project objectives	X		X				Pages 54 - 55
Includes an explanation or list of the information to be calculated and the data elements that will be used to make those calculations	X		X				Pages 54 – 55
Includes applicable calculations and equations (if known) or explanations of how they will be developed.	X		X				Pages 54 – 55
Includes plans for excluding outliers.	X		X				Pages 54 – 55
D3. Methodology Documentation and Conceptual Review							

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
If exact methodologies for analyzing the data will need to be developed or modified during the course of data analysis, explains the process by which such methodologies will be documented, who is responsible for reviewing/ approving their use, and how the methodologies will be checked to ensure they yield the desired products	X		X				Page 56

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
D4. Technical Review of the Data Analysis							
Describes activities that will be used to ensure the data analyses are being implemented as specified and will support project objectives	X		X				Page 57
Explains procedures for identifying and notifying appropriate personnel if changes to the originally planned procedures are warranted, and the process for approving, documenting and implementing such changes	X		X				Page 57
D5. Final Verification of Data Analysis and Reconciliation with User Requirements							
Describes the process for reviewing the final work product to ensure that the work was generated in accordance with the QAPP, and that the work product addresses the overall project goals and objectives	X		X				Page 57 – 58
Describes how the results of this assessment will be documented	X		X				Page 57 – 58
Describes how any limitations of the data or data analyses that were used to prepare the final work product will be documented and communicated	X		X				Page 57 – 58

EPAUnited States Environmental Protection Agency
Washington, DC 20460**Work Assignment**

Work Assignment Number

4-07

☐

Other

☐

Amendment Number:

Contract Number

EP-C-13-039

Contract Period 09/11/2013 To 07/31/2018

Base

Option Period Number 4

Title of Work Assignment/SF Site Name

WMOSt Refinements

Contractor

ABT ASSOCIATES INC.

Specify Section and paragraph of Contract SOW

A2.1, A2.2, A2.3, A3, A6, B1, C1, C7, D.1, D.2, G

Purpose:

☒

Work Assignment

☐

Work Assignment Close-Out

☐

Work Assignment Amendment

☐

Incremental Funding

☐

Work Plan Approval

Period of Performance

From 08/01/2017 To 07/31/2018

Comments:

Work on this work assignment is not authorized to begin until August 1, 2017.

☐

Superfund

Accounting and Appropriations Data

☒

Non-Superfund

SFO
(Max 2)☐

Note: To report additional accounting and appropriations data use EPA Form 1900-69A.

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

Contract Period:

Cost/Fee:

LOE: 0

09/11/2013 To 07/31/2018

This Action:

485

Total:

485

Work Plan / Cost Estimate Approvals

Contractor WP Dated:

Cost/Fee

LOE:

Cumulative Approved:

Cost/Fee

LOE:

Work Assignment Manager Name Naomi Detenbeck

Branch/Mail Code:

Phone Number: 401-782-3162

FAX Number:

(Signature)

(Date)

Project Officer Name Ahmar Siddiqui

Branch/Mail Code:

Phone Number: 202-566-1044

FAX Number:

(Signature)

(Date)

Other Agency Official Name

Branch/Mail Code:

Phone Number:

FAX Number:

(Signature)

(Date)

Contracting Official Name Noelle Mills

Branch/Mail Code:

Phone Number: 513-487-2171

FAX Number:

(Signature)

(Date)

WORK ASSIGNMENT

I. Title: ENHANCEMENTS TO THE WATERSHED MANAGEMENT OPTIMIZATION SUPPORT TOOL (WMOST)

Contractor: Abt Associates

Contract No.: EP-C-13-039

II. Work Assignment Number: 4-07

III. Estimated Period of Performance: August 1, 2017 through July 31, 2018

IV. Estimated Level of Effort: 485

V. Key EPA Personnel:

Work Assignment Contracting Officer Representative (WACOR):

Naomi Detenbeck
US EPA Atlantic Ecology Division
27 Tarzwell Drive
Narragansett, RI 02882
401/782-3162
401/782-3030 (fax)

Alternate Work Assignment Contracting Officer Representative (Alt WACOR):

Marilyn ten Brink
US EPA Atlantic Ecology Division
27 Tarzwell Drive
Narragansett, RI 02882
401/782-3078
401/782-3030 (fax)

VI. Background and Purpose:

The 1972 Clean Water Act (CWA) directs the Environmental Protection Agency (EPA) to develop national technology-based regulations for categories of industries that discharge pollutants directly to surface waters (effluent guidelines) or that discharge pollutants indirectly through sewage treatment plants (pretreatment standards). The CWA also directs EPA to develop national technology-based regulations for new industrial facilities (new source performance standards).

Under Executive Orders 12866 and 13563, EPA is required to estimate the potential benefits and costs to society. As such, the purpose of this Work Assignment (WA) is to update the EPA-supported Watershed Management Optimization Support Tool (WMOST v. 1, v. 2 and v. 2.1, v. 3 (pending); US EPA 2013a,b; 2015, 2016) for use in Integrated Planning (<http://water.epa.gov/infrastructure/greeninfrastructure/upload/memointegratedmunicipalplans.p>

df) and Integrated Water Resources Management (IWRM; Zoltay 2007, Zoltay et al. 2010). Version 2 of the WMOST tool focuses on water quantity goals: maintaining minimum flows adequate to support aquatic life use, reducing flooding risks and costs, and meeting human water demands (US EPA 2013a, b; 2015, 2016). Version 3 of WMOST is designed to allow users to meet water quality goals for concentrations and loads and to meet targets for reduction or elimination of combined sewer overflow (CSO) events. WMOST is designed to be a user-friendly decision support tool to allow communities to evaluate and optimize the relative costs and benefits of water resource management options, including implementation of green infrastructure stormwater best management practices (BMPs), land conservation, low impact development (LID), water re-use, aquifer storage and recovery, and repair of existing infrastructure to fix infiltration/inflow problems. The tool has been demonstrated with pilot studies (upper Ipswich, Danvers/Middleton, Halifax, Massachusetts (MA)).

Modifications to WMOST are underway to add 1) a water quality module to evaluate the effect and cost-effectiveness of watershed management options (including the use of green infrastructure stormwater BMPs) on reduction of nutrient loads and concentrations, 2) a combined sewer overflow (CSO) module to evaluate the effect and cost effectiveness of management options on reduction or elimination of CSOs, 3) a climate change module to facilitate comparison of optimal solutions across climate change scenarios and to support robust decision-making, 4) a co-benefits module, and 5) a linked watershed module (the latter pending available resources). The WMOST software is a contract deliverable and is being provided to EPA with "unlimited rights," as that term is defined in FAR 52.227-14(a) (1987). The new modules are being evaluated through application to multiple case studies.

The goals of this work assignment are 1) to complete testing of the CSO module, 2) to complete demonstration and testing of the robust-decision making module/tools, 3) to add coding and user interface to implement the co-benefits module, 4) to continue to update user databases (e.g., model inputs to WMOST, co-benefits data) as new inputs become available, 5) to complete ongoing case studies, 6) to complete compatibility testing of new modules with Excel 2016 and Windows 10, and 7) to complete reviews of and revisions to documentation of new modules and tools (theoretical documentation, user guides, and case studies) for publication. EPA also anticipates addition of a module or tools to facilitate application of WMOST to linked watersheds but that effort will require an amendment with additional resources.

Under this work assignment the contractor shall conduct all analyses requiring the collection and manipulation of data and models in accordance with the EPA approved quality assurance (QA) project plan that will be based on Task 2 QAPP language. The QA project plan shall describe the procedures for assuring the quality of the primary and secondary environmental and economic data used for this work assignment.

In carrying out the tasks specified in this work assignment, the contractor may be called upon to build upon and continue work performed under WA 6-32 and 5-32 under the Contract EP-C-07-023, and work assignments 1-07, 2-07, and 3-07 under the current Contract EP-C-13-039. The work performed under this work assignment will not duplicate work conducted under the previous work assignments.

References cited in Background

U.S. EPA. 2013a. Watershed Management Optimization Support Tool (WMOST) v1: Theoretical Documentation. US EPA Office of Research and Development, Washington, DC, EPA/600/R-13/151, 2013.

U.S. EPA. 2013b. Watershed Management Optimization Support Tool (WMOST) v1: User Manual and Case Study Examples. US EPA Office of Research and Development, Washington, DC, EPA/600/R-13/174, 2013.

Zoltay, V.I. 2007. Integrated watershed management modeling: Optimal decision making for natural and human components. M.S. Thesis, Tufts Univ., Medford, MA.

Zoltay, V.I., R.M. Vogel, P.H. Kirshen, and K.S. Westphal. 2010. Integrated watershed management modeling: Generic optimization model applied to the Ipswich River Basin. Journal of Water Resources Planning and Management.

Under the previous work assignment(s), Abt Associates performed the following analyses:

- Development of WMOST v1 with associated theoretical documentation, user guide, and case study reports
- Support for WMOST v1 workshop at EPA Region 1 in Chelmsford
- Development of WMOST v2 with associated theoretical documentation, user guide and case study reports
- Development of WMOST v2.1 with associated documentation of corrected program bugs
- Development of training material for workshop held at EPA Region 1 on June 8, 2016 and editing of associated training videos for posting
- Technical memoranda describing new water quality and CSO modules
- Draft and preliminary testing of water quality module with associated loadings database for New England
- Technical memorandum describing hydrology pre-processor
- Version 1 and 2 of hydrology pre-processor to create hydrology and loading input time series, respectively, for WMOST from output from SWAT and HSPF
- Draft robust decision-making tools for generating multiple input (climate) scenarios and running sensitivity analyses
- Technical memorandum describing approach to new climate change scenario comparison tool
- Technical memorandum describing approach to expanding access to pre-processed data for hydrology module

VII. General Requirements of the Work Assignment and Schedule

Confidential Business Information: During the course of the work assignment, the contractor will not be accessing and evaluating CBI.

Budget Reporting: The contractor under this work assignment is required to report to the EPA WACOR and Contract-Level Contracting Officer Representative (CL-COR) when 75 percent of the total work assignment funding amount has been depleted. The contractor must also report to the EPA WACOR when 75 percent of the approved Workplan budget has been depleted.

Identification as Contracting Staff: To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and prior to the start of any meeting. Contractor personnel are prohibited from acting as the Agency's official representative. When speaking with the public, the contractor should refer all interpretations of policy to the EPA WACOR.

Limitation of Contractor Activities: The contractor shall submit drafts of all deliverables to the EPA WACOR for review prior to submission of the final product. These drafts will clearly specify the methods, procedures, considerations, assumptions, relevant citations, data sources and data that support any conclusions and recommendations. The contractor shall incorporate all EPA WACOR comments into all final deliverables, unless otherwise agreed upon by the EPA WACOR. The contractor shall adhere to all applicable EPA management control procedures as implemented by the EPA Contracting Officer (CO), EPA CL-COR, and EPA WACOR.

Quick Response: Under this Performance Work Statement the contractor may be required to provide information for use by EPA for quick responses and analyses of options, issues, and policy decisions. Quick responses are those which require completion in one to five working days.

Travel:

A request for approval for any travel directly chargeable to this work assignment must be submitted and approved by the CL-COR before travel begins. At this point in time, no travel is anticipated for this work assignment.

Deliverable Formatting: All memos, draft comments, summaries and responses, and chapters are to be provided in electronic form using Word and/or Excel/Access, ArcMap, or, in special cases another software program agreed to by EPA. Memos are to be written in a manner which will make them easy to turn into draft chapters for the Final Report. For deliverables that are in Word or pdf versions of Word documents, that are intended to be shared with management or the public, the contractor shall use decimal align in all tables containing columns of numbers of varying digits, whether decimal places are reported or not. All final materials, e.g., memos, chapters, etc. are to be prepared only after receiving written technical direction from the EPA WACOR and will be formatted to be in compliance with the Section 508 Amendment to the Rehabilitation Act of 1973.

VIII. Performance Work Statement (PWS)

The EPA WACOR will review all deliverables in draft form and provide revisions and/or comments to the contractor. The contractor shall prepare the final deliverables incorporating the EPA WACOR's comments.

Task 1 - Prepare Workplan

The contractor shall prepare a workplan per contract requirements. The workplan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, a detailed cost estimate by task, and a staffing plan. The EPA WACOR, the CL-COR and the CO will review the workplan. However, only the CO can approve/disapprove, suggest revisions, or change the workplan. Official revisions will be given to the contractor by the CO. The contractor shall prepare a revised workplan incorporating the CO's comments, if required.

A biweekly update call with the EPA WACOR will be required for this work assignment to discuss progress on deliverables, costs, and other potential issues.

Deliverables and schedule under Task 1

1a. Workplan per contract requirements.

Task 2 - Quality Assurance (Contract PWS Section G)

An existing Quality Assurance Project Plan (QAPP), which was developed under WA 1-07 to describe the development of WMOST v.2, shall be updated as needed to cover the updated activities of the current work assignment. The contractor shall adhere to the QAPP which documents how quality assurance and quality control will be applied to the collection and use of environmental and economic data under this work assignment. The QAPP assures that any results obtained are of the type and quality needed and expected under this work assignment. The QAPP addresses the collection and use of wastewater sampling data, facility questionnaire data, any models to be used, secondary data (including the acceptance criteria), any new database management requirements and any other relevant work that might affect the quality of the data. The QAPP describes the controls to ensure high-quality data entry. The text of the QAPP also explicitly identifies tools that the contractor shall use in the project to document reproducibility and traceability, such as standard operating procedures (SOPs), checklists, and guidelines. Tools should be provided as attachments to the QAPP.

The contractor shall document QA activities in any major deliverable. Work conducted under a QAPP must be included in progress reports at least monthly unless otherwise requested by the EPA WACOR and include QA performed, problems encountered, deviations from the QAPP and corrective actions taken.

The EPA WACOR will review the revised QAPP and then provide the contractor with written notification of approval or edits that need to be made through written technical direction. The contractor shall prepare the edited QAPP incorporating the EPA WACOR's comments, if required. After receiving notification of approval the contractor shall adhere to the revised QAPP.

Deliverables and schedule under Task 2

- 2a. Revised QAPP within 14 calendar days of EPA WACOR technical direction.**
- 2b. If additional edits are required, QAPP must be updated within 5 calendar days of receipt of comments from the EPA WACOR, at technical direction of EPA WACOR.**
- 2c. At a minimum report monthly on QA work within the monthly progress report.**

Task 3 - Prepare Standardized Naming Convention and Version Control Memorandum

The contractor shall adhere to the EPA WACOR approved standardized naming convention and version control (SNCVC) plan that was developed under the Construction and Development WA 0-01 of the contract EP-C-07-023 (WA0-01_T1_SNCVC_08.31.07_V1.pdf). The contractor shall use this standardized convention for all deliverables associated with this work assignment.

The EPA WACOR may request the contractor through written technical direction to amend the SNCVC memorandum at any point under this WA. The EPA WACOR will review the revised memorandum and then provide the contractor with written notification of approval or edits that need to be made. The contractor shall prepare the edited SNCVC memorandum incorporating the EPA WACOR's comments, if required. After receiving notification of approval the contractor shall use the revised SNCVC.

Deliverables and schedule under Task 3

- 3a. If required, revised memorandum within 3 calendar days of receipt of comments from the EPA WACOR, at technical direction of EPA WACOR.**

Task 4 – Update of WMOST theoretical documentation and user guide with water quality, climate change, and CSO modules and case study results (Contract PWS Sections A, B, C1)

The final tool formatted for use with MS EXCEL 2013 and 2016 will be provided along with a set of updated instructions on how to apply WMOST v.3. The contractor and EPA agree that the software that is developed under the work assignment (WMOST v.3), including the original software developed by Viktoria Zoltay which is being modified and incorporated into the WMOST versions, is a contract deliverable and is being provided to EPA with "unlimited rights," as that term is defined in FAR 52.227-14(a) (1987). The contractor shall provide updates for both the existing theoretical documentation for WMOST (US EPA 2015a) and the existing user manual (US EPA 2016) and provide copies in both Word and pdf formats as deliverables. The theoretical documentation and user manual shall also be provided with unlimited rights. The contractor shall revise the theoretical documentation and user guide in response to EPA and reviewer comments. In the past, case studies have been published as an appendix to the user guide. For subsequent versions, EPA may publish these as a separate report to avoid delays in release of the user guide.

Deliverables and schedule under Task 4 (due dates listed or modified by written technical direction).

4.a. Draft updated WMOST v.3. documentation (both theoretical documentation and user guide sections) including corrections to version 2 documentation embodied in version 2.1, water quality modules, CSO module, hydrology pre-processor tool, and climate scenario comparison module (August 31, 2017).

4.b. If additional edits are required the revised WMOST v.3 documentation shall be updated within 14 calendar days of receipt of comments from the EPA WACOR, at technical direction of EPA WACOR. Initial comments will be provided by the EPA WACOR upon receipt of the draft products and then again after the Office of Research and Development (ORD) peer review comments have been received.

Task 5 – Test compatibility of WMOST with MS Office Excel 2016 and update as needed

The contractor shall test compatibility of WMOST v3 modules and subsequent versions for compatibility with MS Office Excel 2016 (pending US EPA planned upgrades in October 2016 and technical direction from the WACOR) using case study data from previous analyses performed with MS Excel 2013. Errors, resolution of errors related to code changes in Excel Visual Basic, and effects on backward compatibility (to Excel 2013) shall be reported to EPA. WMOST v3 and associated case study files shall be updated to be compatible with MS Excel 2016.

Deliverables and schedule under Task 5 (due dates listed or modified by written technical direction).

5a. Memo documenting compatibility testing of WMOST v 2.2 and v3 with MS Excel 2016 (Coincident with delivery of WMOST v3).

Task 6 – Data Library Enhancements to Hydrology and Flood Module (Contract PWS Sections A,B)

Functionality of the existing Hydrology and Water Quality modules will be extended to allow incorporation of Hydrological Simulation Program (HSPF) and Soil and Water Assessment Tool (SWAT) model hydrology and water quality outputs to be made available for download through US EPA's Estuary Data Mapper application (www2.epa.gov/edm). These will include current and historic runoff and recharge time series for New England HSPF models already in the WMOST v2 Supplemental Files, current and historic runoff and recharge time series from two additional New England HSPF models: Charles River watershed and Farmington sub-basin from the CT Watershed Model, 2-4 future climate scenario time series for each of the New England HSPF models (to be developed through an interagency agreement with USGS), and current/historic model outputs from the USGS/EPA Chesapeake Bay Watershed Model 6.1 (beta). Options for including ancillary hydrology model data needed as WMOST inputs shall also be included: Groundwater recession coefficients (Interflow Recession Parameter (IRC) and Active Groundwater Recession Constant (AGWRC)), Infiltration Parameter (INFILT), Interflow (INTFW), and Effective Impervious Area, normally available from the HSPF model User Control Input (UCI) files. EPA shall provide access to model output files via the EPA Estuary Data Mapper (EDM) server and Abt shall be responsible for updating WMOST v3 to accommodate access to

existing set of watersheds loaded onto EDM and subsequent additions.

Deliverables and schedule under Task 6 (due dates listed or modified by written technical direction).

6a. Modified hydrology and water quality modules to allow import of hydrology and loading time series files and watershed characteristics files downloaded via EPA Estuary Data Mapper application coincident with delivery of WMOST v3 (August 31, 2017)

Task 7 – Enhancement of automated hydrologic time series capability in WMOST v.2 and development of climate screening interface for use with WMOST v.2

The contractor shall develop, in close consultation with ORD technical experts, a preliminary, experimental version of a ‘climate screening interface’ for WMOST that would facilitate the production of a series of WMOST runs that span a range of climate futures. This interface would allow the user to specify a sequence of runs that would create a range of WMOST outputs corresponding to different climate/hydrology futures. Another key aspect of this capability would be to facilitate display of results from said sequence of runs in a way that would allow the user to develop insight into climate impacts on their system of interest, e.g., the impacts of climate change on the performance of a specific BMP under multiple scenarios of future climate change. This functionality would entail running multiple climate scenarios from either the WMOST dataset or user-supplied datasets of runoff, recharge, precipitation, and temperature time series with a fixed set of management options rather than optimizing management solutions for each climate scenario. The fixed set of management options would be specified by the user either based on the user’s preference or based on an initial optimization run for baseline conditions.

Finally, the contractor shall apply the enhanced hydrologic model inputs and climate screening capabilities, driven by HSPF/SWAT outputs from the 20 Watersheds project, in one or more case studies for which WMOST simulations are already planned (e.g., as per Task 8 below). The purpose of this case study work would be to demonstrate the applicability of the enhanced WMOST model for ‘stress testing’ specific BMPs across a range of plausible future climate conditions.

Deliverables and schedule under Task 7

7a. Draft updated WMOST v.2 tool with preliminary climate screening interface and associated documentation (August 31, 2017).

7b. Revised WMOST v2 tool in response to EPA internal review comments (September 30, 2017)

7c. Case study application WMOST files with results (September 15, 2017)

7d. Revised case study application files in response to EPA internal review comments (September 30, 2017)

Task 8 – Additional WMOST Case Studies (Contract PWS Sections B, D)

The contractor shall provide up to 100 hours of technical support for additional WMOST case studies which may include a combination of water quantity- and water quality related goals. Support shall include providing overviews of WMOST functionality to stakeholders, assisting stakeholders with problem formulation, evaluating sources of input data for WMOST case studies, potential modifications to existing WMOST modules to facilitate use of regional datasets (e.g., BMP parameters for California), assistance in setting up WMOST optimization runs, and interpretation and documentation of results. Support shall be provided for three existing case studies. Others (e.g., communities currently receiving support from Office of Water to incorporate green infrastructure into hazard mitigation plans) may be identified pending addition of new resources:

- 1) Chesapeake Bay community – Maryland Department of Environment (MDE) is interested in evaluating the utility and compatibility of WMOST to support the Phase II Watershed Implementation Plans which in turn support the Chesapeake Bay Total Maximum Daily Load (TMDL) process. MDE is working on identifying a suitable community to serve as a case study. Chesapeake Bay Program Office has provided hydrology time series data from the Chesapeake Bay Watershed Model v. 6 to serve as inputs to WMOST version 2.
- 2) Region 7 Communities – Region 7 has expressed interest in exploring the application of WMOST to promote community resilience in the face of drought.
- 3) Expansion of WMOST application to entire Taunton River watershed (moving from headwater basins downstream) through collaboration with Southern New England Coastal Watershed Restoration (SNECWR) grantees

Deliverables and schedule under Task 8 (due dates listed or modified by written technical direction)

- 8a. Provide overviews of WMOST functionality to stakeholders (within 2 weeks following technical direction by EPA WACOR)
- 8b. Participate in conference calls or AdobeConnect webinars set up by EPA with stakeholders to discuss problem formulation process for setting up WMOST case studies (within 2 weeks following technical direction by EPA WACOR)
- 8c. Provide assistance and guidance to stakeholders in setting up case studies with WMOST v3 beta during EPA-scheduled conference calls (to be determined (TBD) based on technical direction from EPA WACOR)
- 8d. Provide assistance with WMOST optimization runs for case studies (TBD based on technical direction from EPA WACOR)

8e. Provide assistance with interpretation of WMOST output for case studies in the form of technical memo (TBD based on technical direction from EPA WACOR)

8f. Draft technical memorandum describing results of one or more WMOST case study analyses (within 2 weeks following technical direction by EPA WACOR)

8g. Revised technical memorandum describing results of one or more WMOST case study analyses (within 2 weeks following receipt of comments from EPA WACOR)

Task 9 – Co-benefits module (Contract PWS Sections A, B)

The contractor shall develop a co-benefits module for WMOST. Initial classes of co-benefits to be accommodated include:

- 1) Co-benefits associated with Hydrologic Response Unit (HRU) area
- 2) Co-benefits associated with best management practice (BMP) area and type
- 3) Cumulative environmental quality co-benefits
 - a. Avoided water quality (WQ) treatment costs
 - b. Avoided dredging costs
 - c. Avoided costs associated with combined sewer overflow (CSO) event frequency, e.g., beach closures, shellfish bed closures, hospital visits for gastrointestinal illness
 - d. WQ societal value (Water Quality Index (WQI) approach)
 - e. Property value enhancements associated with green space

The co-benefits module shall be designed in a flexible fashion so that quantitative information related to co-benefits can be easily added and updated in the future. This could include accessing data from a separate stand-alone dataset to be downloaded from the WMOST web site and which can be periodically updated and/or by accessing spatially-explicit data from a remote server via web queries. The co-benefits module shall be designed to allow the user to choose between 1) tracking and reporting co-benefits as supplemental information associated with optimum management strategies, and 2) including value of co-benefits in costs as part of the objective function to be minimized. Examples of existing background data on co-benefits that could be included in cost-benefit calculations in the future are listed in the attached table (Cobenefits.xlsx).

During the current option period, the contractor shall modify WMOST code to update the user interface, provide mechanisms for co-benefit data inputs, add code to calculate the value of co-benefits, and include co-benefits as an offset to total costs as part of the objective function to be minimized. A green roof BMP shall be added to the suite of management options included in WMOST because many identified co-benefits are associated with green roofs.

Deliverables and schedule under Task 9 (due dates listed or modified by written technical direction)

- 9a. Draft updates to theoretical documentation for co-benefits module – September 30, 2017
- 9b. Draft updates to user guide for co-benefits module – September 30, 2017
- 9c. Revised theoretical documentation for co-benefits module incorporating EPA review comments – (Within 2 weeks following receipt of EPA comments from EPA WACOR)
- 9d. Revised user guide for co-benefits module incorporating EPA review comments - (Within 2 weeks following receipt of EPA comments from EPA WACOR)
- 9e. Draft WMOST version 4 including co-benefits module (September 30, 2017)
- 9f. Final WMOST version 4 including co-benefits module (Within 2 weeks following receipt of EPA comments from EPA WACOR)

References for Task 9 (and associated Cobenefits.xlsx table)

- Booth, D.B., B. Visitacion, and A.C. Steinemann. 2006. Damages and Costs of Stormwater Runoff in the Puget Sound Region. Summary Report. Puget Sound Action Team and the University of Washington, The Water Center.
<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.365.3295&rep=rep1&type=pdf>
- City of New York. 2008. PlanNYC: Sustainable Stormwater Management Plan 2008. http://s-media.nyc.gov/agencies/planyc2030/pdf/nyc_sustainable_stormwater_management_plan_final.pdf.
- Demuzere, M., K. Orru, O. Heidrich, E. Olazabal, D. Geneletti, H. Orru, A.G. Bhawe, N. Mittal, E. Feliu, and M. Faehnle. 2014. Mitigating and adapting to climate change: Multi-functional and multi-scale assessment of green urban infrastructure. *J. Env. Manage.* 146: 107-115.
- Devine, J. 2014. Testing the Waters 2014: A Guide to Water Quality at Vacation Beaches. Natural Resources Defense Council. <https://www.nrdc.org/resources/testing-waters-2014-guide-water-quality-vacation-beaches>.
- Foster, J., A. Lowe, and S. Winkelman. 2011. The Value of Green Infrastructure for Urban Climate Adaptation. The Center for Clean Air Policy. February 2011.
- Georgescu, M., P.E. Morefield, B.G. Bierwagen, and C.P. Weaver. 2014. Urban adaptation can roll back warming of emerging megapolitan regions. *PNAS* 111(8): 2909-2914.
- Jagai, J.S., Q. Li, S. Wang, K.P. Messier, T.J. Wade, and E.D. Hilborn. 2015. Extreme precipitation and emergency room visits for gastrointestinal illness in areas with and without Combined Sewer Systems: An analysis of Massachusetts data, 2003 – 2007. *Environ. Health Perspect.* 123: 873-9.
- Mazzotta, M.J., E. Besedin, and A.E. Speers. 2014. A meta-analysis of hedonic studies to assess the property value effects of low impact development. *Resources*: 3: 31-61.

Spatari, S., Z. Yu, and F.A. Montalto. 2011. Life cycle implications of urban green infrastructure. *Env. Poll.* 159:2174-2179.

Stratus Consulting. 2009. A Triple Bottom Line Assessment of Traditional and Green Infrastructure Options for Controlling CSO Events in Philadelphia's Watersheds. Prepared for City of Philadelphia Water Department. https://www.epa.gov/sites/production/files/2015-10/documents/gi_philadelphia_bottomline.pdf.

US EPA. EnviroAtlas: EnviroAtlas Dynamic Data Matrix. www.epa.gov/enviroatlas/enviroatlas-dynamic-data-matrix. Accessed 3/20/17.

U.S. EPA. 2015. Benefit and Cost Analysis for the Effluent Limitations Guidelines and Standards for the Steam Electric Power Generating Point Source Category. U.S. Environmental Protection Agency, Office of Water, Washington, DC. EPA-821-R-15-005.

U.S. EPA. 2009. Economic Analysis of Final Effluent Limitation Guidelines and Standards for the Construction and Development Industry. U.S. Environmental Protection Agency, Office of Water, EPA 821-R-09-011, November 2009. <https://www.epa.gov/eg/construction-and-development-effluent-guidelines-documents>

U.S. EPA. 2004. Report to Congress: Impacts and Control of CSOs and SSOs. U.S. Environmental Protection Agency, Office of Water, Washington, DC. EPA 833-R-04-001.

EPAUnited States Environmental Protection Agency
Washington, DC 20460**Work Assignment**

Work Assignment Number

4-15

☐ Other☐ Amendment Number:

Contract Number

EP-C-13-039

Contract Period 09/11/2013 To 07/31/2018

Base

Option Period Number 4

Title of Work Assignment/SF Site Name

2017 Emissions Inventory Confe

Contractor

ABT ASSOCIATES INC.

Specify Section and paragraph of Contract SOW

D-2

Purpose:



Work Assignment



Work Assignment Close-Out



Work Assignment Amendment



Incremental Funding



Work Plan Approval

Period of Performance

From 08/01/2017 To 07/31/2018

Comments:

2017 Emissions Inventory Conference; work on this WA not authorized to begin until August 1, 2017.



Superfund

Accounting and Appropriations Data



Non-Superfund

SFO
(Max 2)

Note: To report additional accounting and appropriations data use EPA Form 1900-69A.

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

Contract Period:

Cost/Fee:

LOE: 0

09/11/2013 To 07/31/2018

This Action:

160

Total:

160

Work Plan / Cost Estimate Approvals

Contractor WP Dated:

Cost/Fee

LOE:

Cumulative Approved:

Cost/Fee

LOE:

Work Assignment Manager Name Kim Paylor

Branch/Mail Code:

Phone Number: 919-541-5474

FAX Number:

(Signature)

(Date)

Project Officer Name Ahmar Siddiqui

Branch/Mail Code:

Phone Number: 202-566-1044

FAX Number:

(Signature)

(Date)

Other Agency Official Name Nicholas Bisher

Branch/Mail Code:

Phone Number:

FAX Number:

(Signature)

(Date)

Contracting Official Name Kathleen Rechenberg

Branch/Mail Code:

Phone Number: 513-487-2853

FAX Number:

(Signature)

(Date)

PERFORMANCE WORK STATEMENT

TITLE: Emission Inventory Conference for 2017

Contract No.: EP-C 13-039

Contractor: ABT

Work Assignment No.: 4-15

THE WORK ASSIGNMENT INCLUDES HOURS FOR PREPARATION OF THE WORKPLAN/COST ESTIMATE AND HOURS TO BEGIN THE WORK ASSIGNMENT. THE CONTRACTOR SHALL PROPOSE THE HOURS NECESSARY TO COMPLETE ALL TASKS. NO PREVIOUSLY PERFORMED WORK SHALL BE DUPLICATED.

WORK ASSIGNMENT COR (WACOR)

Kim D. Paylor
OAQPS/AQAD/EIAG
US EPA, RTP, NC 27711
Telephone: 919-541-5474

BACKGROUND:

The Emissions Inventory Conference (EIC) is a biennial event intended to 1) apprise participants of developments in emissions inventory techniques, latest science, available data and policy implicants, and 2) share experiences and insight among emissions inventory professionals from federal/state/local and international regulatory agencies, Native American governments, industry and academia.

The EIC provides a major, comprehensive and in-person forum for substantive interaction among emission inventory professionals across regulatory agencies and affected entities, industry, and academia. Emission inventory issues are of vital importance for any organization that relies on air quality modeling, because emissions data are one of the critical inputs to air quality models. Without emission inventories, air quality forecasts and assessments could not be done. Participants from other federal agencies involved with air quality and climate issues rely on this conference for exchanging the latest developments in emissions estimation and fostering discussions across international, federal, regional, state, and other programmatic boundaries. Thus, a number of agencies with a stake in emissions data and air quality modeling (such as National Aeronautics and Space Administration (NASA), National Oceanic and Atmospheric Administration (NOAA), National Laboratories, and the US Forest Service) typically send participants.

Additionally, the Environmental Protection Agency (EPA) requires emissions reporting by state and local agencies through the Air Emissions Reporting Requirements Rule as described in 40 CFR Part 51; the EIC is EPA's principle customer-focused outreach effort to those agencies responsible for submitting data to EPA. The timing of the conference is also fortuitous as state agency reporting to EPA for the 2017 National Emissions Inventory is due by the end of calendar year 2018. It's important to note that participation by EPA Regional Office staff responsible for reviewing the state/local/tribal-provided emissions data for State Implementation Plans is likewise critical to meeting the intended purpose of this conference. Also, the EIC includes other in-person training on inventory preparation and use that is not available in any other forum.

The Conference has an average attendance of 350 people. In the past, we have alternated the conference site between the east coast, central US and west coast locations. The conference

typically starts on Monday morning and concludes by Friday afternoon, with a Poster Session held on Tuesday evening from 6-8 pm. The 2017 Conference is planned to be held in August 2017.

STATEMENT OF WORK

The WACOR is authorized to provide technical direction in accordance with the terms of the contract. The following are the tasks the Contractor shall perform:

Task No. 1

The Contractor shall prepare a Work Plan, Cost Estimate and Monthly Progress Report in accordance with the terms and conditions of this contract.

*** This is a continuation of PWS 3-15. If items in Task 2 of PWS 3-15 were not completed, the task should continue*.**

Task No. 2

The contractor shall provide the following conference planning/coordination support:

Prior to the start of the conference and upon the direction by the WACOR, the Contractor shall:

a. Maintain the on-line registration site that was developed for the 2015 EIC. The online registration website shall be in accordance with EPA standards/guidelines and accessible through the EPA conference website. The online registration website shall remain open until 2 weeks prior to the beginning of the Conference. The electronic registration form shall contain the following: Name, Affiliation, Address, Country, Phone Number, E-mail address and choice of training courses. Registration information shall be kept in an Access database and accessible to the WACOR upon request. The online registration page shall include:

- (1) Registration for conference with registration code for EPA employees MM275304
- (2) Conference Logistical Fact Sheet (which includes information on the conference location, driving directions and ground transportation options).
- (3) Conference Contacts
- (4) Administrator Reports
- (5) Conference Preliminary/Final Program
- (6) Exhibitor's Information Package

b. Prepare name tags for all conference attendees prior to and at the conference site. Separate name tags shall be prepared for those individuals attending training sessions. For those individuals registering at the conference site, a form shall be made available so that the information can later be entered into the database for accountability.

c. Provide ongoing liaison support with a private facility regarding poster boards; the hotel for conference planning requirements, overnight room reservations, meeting room requirements (see attached) and registration. Receipt and storage of conference materials shall be available

one week prior to the conference. Return shipment service shall be available. Shipment of items shall be by freight or parcel paid by government accounts. Shipment of materials will be the responsibility of the WACOR.

d. Be available via phone for pre-conference review on Friday, August 11, 2017 to review the Banquet Event Orders (BEO) with hotel staff and WACOR.

Task No. 3

The contractor shall continue to provide the following conference planning, coordination and support.

During the Conference and upon the direction by the WACOR, the Contractor shall:

a. Send two (2) representatives to the Conference to support the WACOR, staff the registration desk, coordinate with hotel on meeting room setup, audio visual equipment, poster board and vendor exhibit hall setup.

b. Arrive on the morning of Sunday, August 13, 2017 to meet with the hotel staff to provide ongoing liaison support and staff registration desk. They shall be available at the registration desk Sunday, August 13, 2017, from 1:00pm – 5:00pm, Monday through Thursday, August 14-17, 2017, 8:00am – 4:00pm and Friday, August 18, 2017, 8:00am – 12:00pm. (Times and dates are subject to change) to support and staff the registration desk.

c. Continue to prepare name tags for conference attendees at the conference site. A form should be made available for those registering at the conference site to complete so that the information can later be entered into the database for accountability. Upon completion of the conference the contractor shall provide a report of all Environmental Protection Agency (EPA) conference attendees.

d. The Contractor's representatives shall continue ongoing liaison support with the contracted company regarding poster boards; the hotel for conference planning requirements, overnight room reservations, meeting room requirements (see attached) and registration. Receipt and storage of conference materials shall be available one week prior to the conference. Shipment of materials will be the responsibility of the WACOR and return shipment service shall be available.

Task No. 4

1. Conference Report Conclusion

- a. The Contractor shall settle all outstanding balances with the hotel using funds made available under this work assignment.
- b. The Contractor shall provide a report of all conference attendees.
- c. The Contractor shall forward to the WACOR a balance sheet of expenses by **September 15, 2017**. The Reporting Requirements are in accordance with the terms and conditions of the contract.

2. Schedule of Deliverables

Task	Deliverable	Delivery Schedule
1	Cost Estimate	Within 20 days of receipt of PWS
2	Project Management	Ongoing
2	Website/Registration Support	Ongoing
3	Registration/Conference Support	1 month before conference through end of conference
4	Conference Report conclusion	September 30, 2017 or 2 weeks after end of event

Attachment

The meeting space format shall be designed according:

Pre-Conference Day

Sunday - 12:00pm - 5:00pm

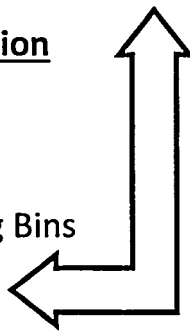
Registration

Desk

Phone

15 Easels

Recycling Bins



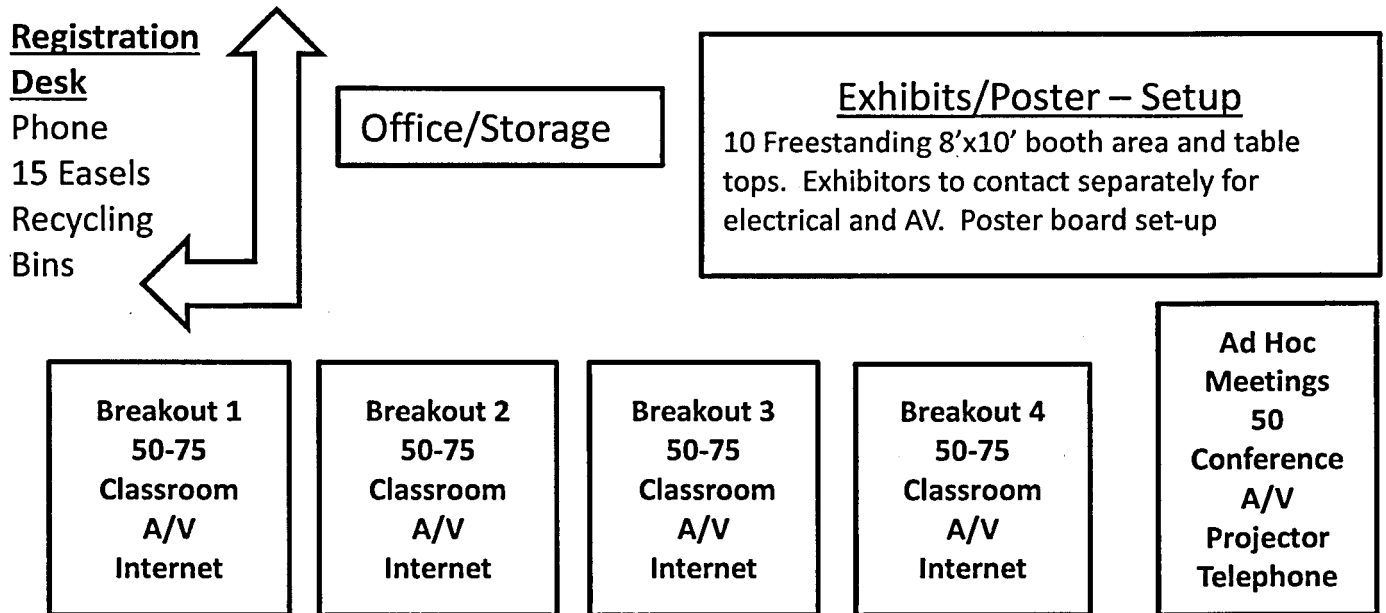
Office/Storage

Pre-Conference

- a. *Registration table with phone for incoming calls only*
Conference materials to be delivered to registration by noon
Pre-registration for attendees from 1:00pm – 5:00pm
Registration desk to remain open throughout conference
- b. *Storage room/office*
- c. *15 tripod easels*
- d. *Provide recycling bins for paper and aluminum cans throughout conference area*

DAY 1 – Training

Monday 8:00am – 5:00pm



Day 1 (All Day)

a. 4 Breakout Rooms (Training)

Classroom for 50-75

Podium, head table w/chairs on riser for two individuals

A/V cart, LCD projector, and screen

Wireless microphone (optional)

Electrical drop, if not included in A/V

Power strips with a minimum of four outlets per table

Flip chart with paper and markers

Internet access

b. Exhibitor and Poster Set up

Approximately 10 8'x10' mix of freestanding booth areas and table tops (number may change depending on Exhibitors)

Facility to provide one table, 2 chairs, wastebasket to each booth

Exhibitors to contract separately for electric and audio/visual

No pipe and draping

Set-up will be afternoon prior to conference start

15-25 4'x8' freestanding cloth poster boards (outside contractor)

- c. Ad Hoc Meeting space available each day for conference*
 - Conference seating for 45/50*
 - Projector Screen*
 - Electrical drop*
 - Telephone to receive incoming phone calls*
 - Room should remain open until 7:00pm*

DAY 2 – Training

Tuesday 8:00am – 12:00pm

Registration

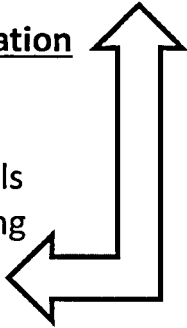
Desk

Phone

15 Easels

Recycling

Bins



Office/Storage

Exhibits/Poster Viewing

During Breaks

Breakout 1

50-75

Classroom

A/V

Internet

Breakout 2

50-75

Classroom

A/V

Internet

Breakout 3

50-75

Classroom

A/V

Internet

Breakout 4

50-75

Classroom

A/V

Internet

Ad Hoc

Meetings

50

Conference

A/V

Projector

Telephone

Day 2 (AM)

a. 4 Breakout Rooms (Training)

Classroom for 50-75

Podium, head table w/chairs on riser for two individuals

A/V cart, LCD projector, and screen

Wireless microphone (optional)

Electrical drop, if not included in A/V

Power strips with a minimum of four outlets per table

Flip chart with paper and markers

Internet access

b. Exhibitor and Poster Viewing during breaks

c. Ad Hoc Meeting space available each day for conference

Conference seating for 45/50

Projector Screen

Electrical drop

Telephone to receive incoming phone calls

Room should remain open until 7:00pm

DAY 2 (PM) – Plenary Session

Tuesday - 1:00pm – 5:00pm

Registration

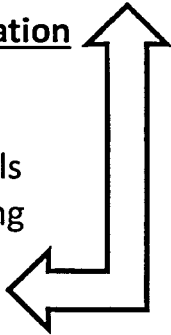
Desk

Phone

15 Easels

Recycling

Bins



Office/Storage

Exhibits/Poster Viewing
During breaks

Plenary Session
Theater 300
A/V
Internet

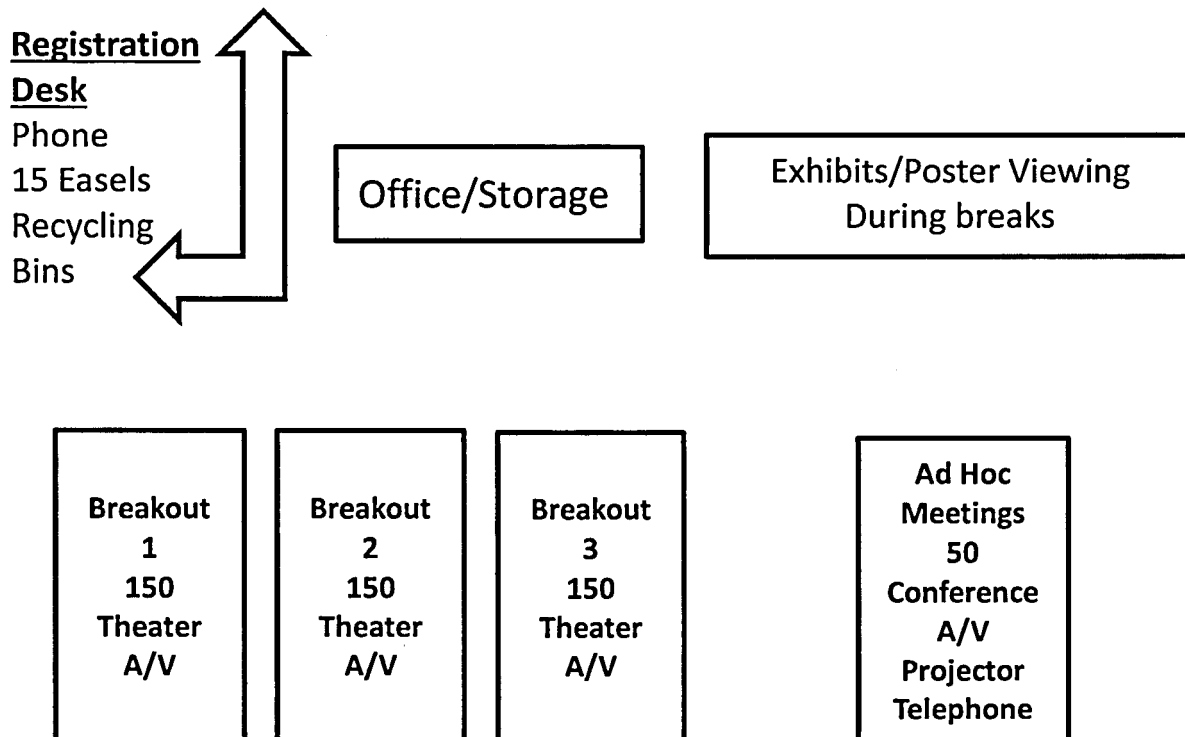
Ad Hoc
Meetings
50
Conference
A/V
Projector
Telephone

Day 2 (PM)

- a. *Plenary Session*
Theater seating for 300/350
Podium, head table w/chairs on riser for 10 individuals
A/V cart, LCD projector, 2 screens (if appropriate for room)
Wireless microphone
Sound mixer
Electrical drop, if not included as part of A/V
Internet access
- b. *Exhibitor and Poster Viewing during breaks*
- c. *Ad Hoc Meeting (continues)*

DAY 3 (All Day) – General Session

Wednesday – 8:00am - 5:00pm

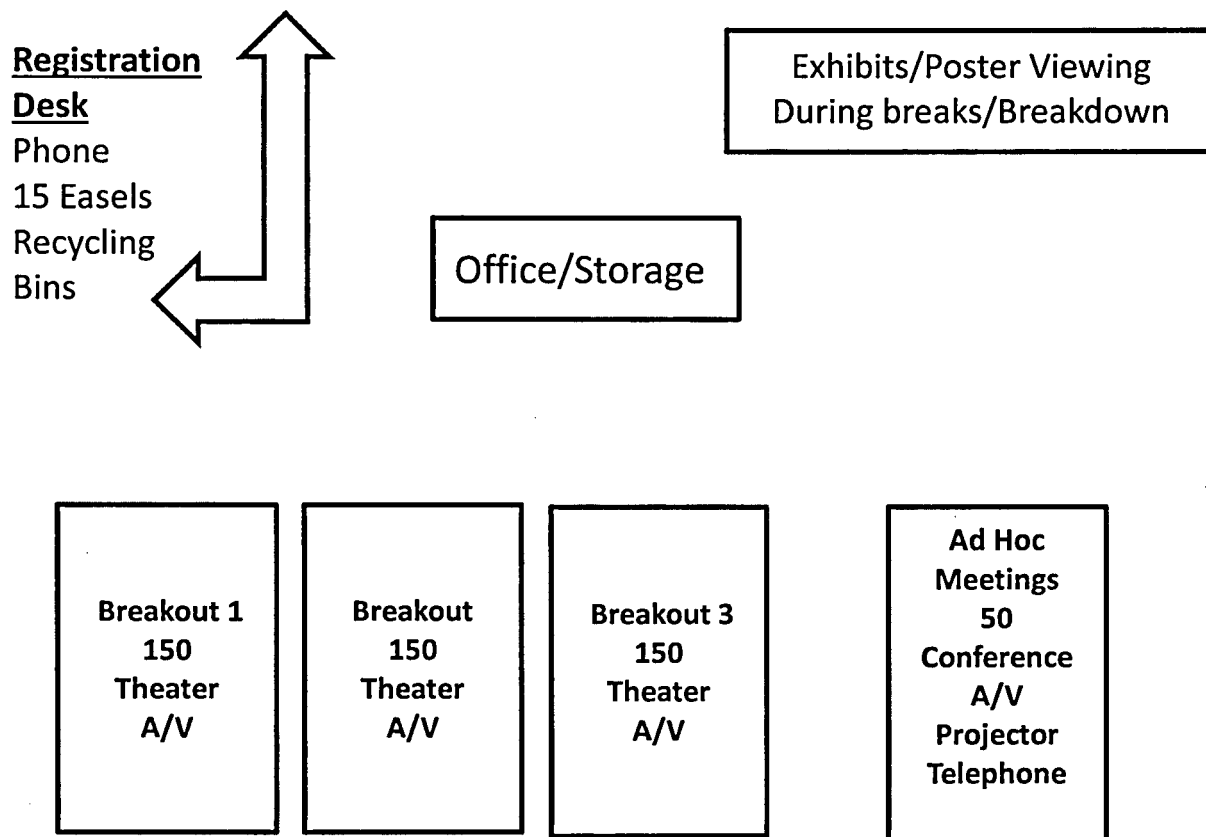


Day 3 (All Day)

- a. *3 Breakout rooms (Converted from Plenary Session)*
 - Theater seating for 150 each*
 - Podium, head table w/chairs on riser for 2 individuals*
 - A/V cart, LCD projector, screen appropriate for room size*
 - Wireless microphone*
 - Electrical drop, if not included as part of A/V*
 - A/V equipment from morning Plenary Session may be re-used for breakouts*
- b. *Ad Hoc Meetings (continues)*
- c. *Exhibitor and Poster Viewing during breaks - continues*

DAY 4 (All Day) – General Session

Thursday - 8:00am – 5:00pm



Day 4 (All Day)

- a. *3 Breakout rooms*
Theater seating for 150 each
Podium, head table w/chairs on riser for 2 individuals
A/V cart, LCD projector, screen appropriate for room size
Wireless microphone
Electrical drop, if not included as part of A/V
- b. *Ad Hocs meetings continues*
- c. *Exhibitor and Poster Viewing during breaks and breakdown at 5:30pm*

DAY 5 (AM) – General Session

Friday - 8:00am – 12:00pm

Registration

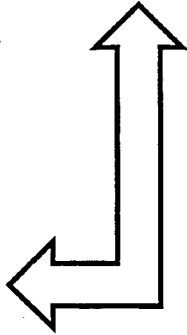
Desk

Phone

15 Easels

Recycling

Bins



Office/Storage

Breakout 1
150
Theater
A/V

Breakout 2
150
Theater
A/V

Breakout 3
150
Theater
A/V

V Day 5 until 12:00 Noon

a. 3 Breakout rooms

Theater seating for 150 each

Podium, head table w/chairs on riser for 2 individuals

A/V cart, LCD projector, screen appropriate for room size

Wireless microphone

Electrical drop, if not included as part of A/V

A/V equipment from morning Plenary Session may be re-used for breakouts

b. Registration desk closes – conference concluded

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 4-29				
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:				
Contract Number EP-C-13-039			Contract Period 09/11/2013 To 07/31/2018 Base Option Period Number 4			Title of Work Assignment/SF Site Name TRI Tribal, Ed/Outreach Supprt				
Contractor ABT ASSOCIATES INC.					Specify Section and paragraph of Contract SOW D1, D2					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval						Period of Performance From 08/01/2017 To 07/31/2018				
Comments: TRI support.										
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund										
Note: To report additional accounting and appropriations data use EPA Form 1900-69A.										
SFO (Max 2) <input type="checkbox"/>										
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										
Authorized Work Assignment Ceiling										
Contract Period:		Cost/Fee:		LOE: 0						
09/11/2013 To 07/31/2018										
This Action:				303						
				303						
Total:										
Work Plan / Cost Estimate Approvals										
Contractor WP Dated:				Cost/Fee			LOE:			
Cumulative Approved:				Cost/Fee			LOE:			
Work Assignment Manager Name Shelley Fudge							Branch/Mail Code:			
							Phone Number: 202-566-0674			
(Signature) _____ (Date) _____							FAX Number:			
Project Officer Name Ahmar Siddiqui							Branch/Mail Code:			
							Phone Number: 202-566-1044			
(Signature) _____ (Date) _____							FAX Number:			
Other Agency Official Name Nicholas Bisher							Branch/Mail Code:			
							Phone Number:			
(Signature) _____ (Date) _____							FAX Number:			
Contracting Official Name Kathleen Rechenberg							Branch/Mail Code:			
							Phone Number: 513-487-2853			
(Signature) _____ (Date) _____							FAX Number:			

**STATEMENT OF WORK/PERFORMANCE WORK STATEMENT
FOR WORK ASSIGNMENT 4-29**

I. Title: Toxics Release Inventory (TRI) Tribal Program Support and TRI Data Access, Outreach/Education Support

Contractor: Abt Associates

Contract No.: EP-C-13-039

II. Work Assignment Number: 4-29 (for option year 4)

III. Estimated Period of Performance: Date of issuance through July 31, 2018

IV. Key EPA Personnel:

Work Assignment Contracting Officer Representative (WACOR):

Shelley Fudge

OCSPP/OPPT/TRIPD/COB (7410M)

202-566-0674

V. Background and Purpose:

EPA's Office of Water participates in multi-media program activities conducted by EPA offices under other environmental and administrative statutes, such as the Emergency Planning and Community Right-to-Know Act (EPCRA) and the Pollution Prevention Act (PPA). Examples of these activities include performing multi-media analysis and identifying pollution prevention opportunities particularly as they relate to management priorities such as environmental justice. The Toxics Release Inventory (TRI) tracks the management of certain toxic chemicals that may pose a threat to human health and the environment.

TRI provides information on releases of chemicals to water, as well as air and land. The information submitted by facilities is compiled by EPA and supports informed decision-making by industry, government, non-governmental organizations and the public by providing data to assess changes in the amount and type of emissions released to the environment. As part of the TRI program, EPA holds a National Training Conference on the Toxics Release Inventory and Environmental Conditions in Communities, which is the primary outreach event for the program and key to the implementation of the TRI program. The conference includes sessions on TRI data and tools, results of analyses using TRI data, and information on conditions and trends in ecological and human health, including environmental justice communities and children's health.

The purpose of this Work Amendment (WA) and longer-term objectives associated with this WA is to provide support for the development of a variety of products that will improve public access, understanding and use of TRI data—including, but not limited to the development of the following projects described below. (Development of all the products described in this work assignment shall be based upon availability of funding and technical direction.)

Note that all of these project deliverables shall be based upon data previously collected, including analyses previously conducted for the TRI National Analysis and other TRI programmatic activities, which operate their own quality assurance processes. All of the projects

described in this work assignment include the development of improved methods for accessing and displaying TRI data, as well as providing support for increased TRI public outreach and education.

The completion of the projects listed below, as well as the schedule for completing the listed milestones will depend upon collaborative efforts with other staff in the Toxics Release Inventory Program Division (TRIPD) staff, as well as with staff in the Office of Environmental Information (OEI) and the Office of Chemical Safety and Pollution Prevention's (OCSPP) Tribal Program. This cross-office collaboration and support is necessary for completion of the project requirements.

VI. General Requirements of the Work Assignment and Schedule

Budget Reporting: The contractor must also report to the EPA WACOR when 75 percent of the approved Workplan budget has been depleted.

Identification as Contracting Staff: To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and prior to the start of any meeting. Contractor personnel are prohibited from acting as the Agency's official representative. When speaking with the public, the contractor should refer all interpretations of policy to the EPA WACOR.

Limitation of Contractor Activities: The contractor shall submit drafts of all deliverables to the EPA WACOR for review prior to submission of the final product. These drafts shall clearly specify the methods, procedures, considerations, assumptions, relevant citations, data sources and data that support any conclusions and recommendations. The contractor shall incorporate all EPA WACOR comments into all final deliverables, unless otherwise agreed upon by the EPA WACOR. The contractor shall adhere to all applicable EPA management control procedures as implemented by the EPA Contracting Officer (CO), EPA Contract-Level Contracting Officer Representative (CL-COR), and EPA WACOR.

Quick Response: Under this Performance Work Statement the contractor may be required to provide information for use by EPA for quick responses and analyses of options, issues, and policy decisions. Quick responses are those which require completion in one to five working days.

Travel: EPA does not anticipate the need for non-local travel by contractor employees and/or subcontractors to support the scope of this work assignment.

Deliverable Formatting: All memos, draft comments, summaries and responses, and chapters are to be provided in hard copy and in electronic form using Word and/or Excel/Access, ArcView, or, in special cases another software program agreed to by EPA. Memos are to be written in a manner which shall make them easy to turn into draft chapters for the Final Report. For deliverables that are in Word or pdf versions of Word documents, that are intended to be shared with management or the public, the contractor shall use decimal align in all tables containing columns of numbers of varying digits, whether decimal places are reported or not. All final materials, e.g., memos, chapters, etc. are to be prepared only after receiving written technical direction from the EPA WACOR.

VII. Performance Work Statement

The EPA WACOR will review all deliverables in draft form and provide revisions and/or comments to the contractor. The contractor shall prepare the final deliverables incorporating the EPA WACOR's comments.

Task 1: Prepare Workplan

The contractor shall prepare a workplan within 15 calendar days after receipt of the work assignment. The workplan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, a detailed cost estimate by task, and a staffing plan. The EPA WACOR, the CL-COR, and the CO shall review the workplan. However, only the CO can approve/disapprove, suggest revisions, or change the workplan. Official revisions shall be given to the contractor by the CO. The contractor shall prepare a revised workplan incorporating the CO's comments, if required.

Task 2: TRI Tribal Program Support

The contractor shall provide support for the development of a number of TRI tribal program related projects, including the development of several enhancements to EPA's existing TRI online tribal filters and TRI automated online tribal factsheets as part of the 2016 TRI National Analysis (using RY 2015 TRI data), as well as the development of one or more new TRI tribal outreach/educational resources.

TRI tribal program support shall include support for the development of automated, interactive maps, visually appealing graphs, charts and text that are expected to be included in the 2016 TRI National Analysis (for RY 2015 TRI data). These enhanced new TRI tribal data display features shall incorporate data derived from a new automated, online TRI tribal filter that will display TRI facilities located within 30-miles of tribal lands, along with the existing two TRI tribal filters that are already publicly available in the TRI Explorer tool. Note that the new "30 mile radius" tribal filter is under development through a work assignment with a different contractor, but it shall be necessary for the contractor under this work assessment to develop automated, interactive, visually appealing maps, charts and graphs for the filters, so they can be highlighted in the 2016 TRI National Analysis, and in order to ensure that such data shall be easily accessible, understandable and useful for the general public.

The contractor shall also provide support, depending upon available funding and technical direction, for determining if any TRI reporting facilities need to amend any of their RY 2016 reporting data, by checking for potential reporting inaccuracies, which shall be used by TRIPD staff to contact TRI regional coordinators and regional tribal coordinators, so that they can contact those facilities that are suspected of reporting incorrectly and help them to submit corrections.

The contractor shall also provide support, depending upon available funding and technical direction, for the development of a number of additional TRI tribal program related projects and/or new TRI tribal outreach/educational resources. Such additional projects are expected to include one or more TRI tribal outreach/educational products, such as fact sheets, guides,

brochures, slide presentations, training materials, videos, website/online resources, as well as user-friendly enhancements to the “TRI for Tribal Communities” webpage. All new TRI tribal program resources developed under this work assignment would need to be made available in electronic online format, and in a hardcopy “handout” format, and would need to be visually appealing, with graphics and charts that are easy to understand and decipher both in color and in black and white.

Task 3: TRI Data Uses by Communities Project

The contractor shall provide support for completing an internal EPA compilation of data that provides examples of how communities use TRI data and how they have benefited from using such data—based upon availability of funding and whether this project has not been completed prior to the start of this new work assignment (under the prior work assignment--WA 3-29--for option period 3). Note that all of the data included in this internal document has already previously been collected. No new data will be collected during this new option period. In addition, note that this document will only be disseminated to TRIPD staff and management and will not be made publicly available. The product shall summarize information previously collected by EPA’s TRI Program about communities that have used TRI data and in some cases have produced analytical products derived from the use of TRI data. This compilation is intended to assist EPA in better understanding the ways in which TRI data have been used and could potentially be used in the future, to help improve environmental conditions in communities, as well as potentially serve as examples for other communities on how they might use TRI data and information. The community-based groups and individuals that are the focus of this compilation are those that are dedicated to improving the health and well-being of communities, many of which fall in the category of those that are overburdened and underserved.

Task 4: TRI Homepage “One-Stop-Shopping” Interface and/or Enhancements to the “TRI for Communities” Webpage

The contractor shall provide, depending upon available funding and technical direction, support for the development of improvements to the TRI website’s homepage that would provide a “one-stop shopping” interface, and/or support for enhancing the current “TRI for Communities” webpage, which is accessible from the TRI website.

This project does not entail the development of new software application tools, nor does it require the development of new databases or models, or the collection of any new data or analysis of data. The product shall incorporate and link to information from existing EPA tools and data sources, as well as other related publicly available environmental tools and data sources. It shall provide links to several publicly available EPA databases and other relevant information.

This project is expected to combine the best elements of various current existing online TRI data tools and provide a “one-stop shopping” approach to address communities’ priority areas of interest. An improved TRI website homepage interface would improve the public’s initial access to TRI data by providing a visual search interface for finding information about a specific TRI facility -- with key data about the facility’s release trends, compliance record, and health effects data for each of the chemicals released at the chosen facility. It would include easy to understand visuals, and include the types of maps, charts and graphs that community-based leaders and members have identified as most useful to them. In addition, depending upon available funding,

the contractor shall develop improvements to the existing automated online “TRI Factsheets,” as well as a variety of ways that community-based data users can produce high quality hardcopies that display key community-tailored data that are easy to customize and print in both color and black and white. Depending upon anticipated need based upon feedback provided by EPA Headquarters and Regional staff, the contractor may also be tasked with providing a Spanish translation version of the data posted on the “TRI for Communities” webpage.

This task may also include, based upon available funding and technical direction, support for developing enhancements to the “TRI for Communities” webpage, including, but not limited to the following: a) updating content about how the TRI program supports community engagement; b) updating links to and contextual content about all relevant TRI online and hardcopy resources; and c) updating links to and contextual content about all relevant EPA and non-EPA Federal, state and local online and hardcopy resources.

Task 5: User-Friendly Enhancements to TRI Guide-ME Tool Access

The contractor shall provide, based upon available funding and technical direction, support for developing user-friendly enhancements to the TRI program’s GuideME tool which shall highlight the most commonly asked questions by TRI reporting facilities and the general public, and that shall provide more effective, user-friendly responses, in order to improve TRI GuideME data access and usage. Such enhancements may entail development of an EZ GuideME-style online access section of TRI GuideME.

Task 6: User-Friendly Enhancements to TRI P2 Search Tool

The contractor shall provide, based upon available funding and technical direction, support for developing enhancements to the TRI Program’s Pollution Prevention (P2) Search Tool and/or other methods of improving public access, understanding and use of TRI P2 data. Such support is expected to include the development of more user-friendly content for the TRI P2 Search Tool, targeted to a community-based audience. Such enhancements are expected to decrease the amount of overly complex and confusing government jargon, and to replace it with more user-friendly text, improved tables, graphs and charts, additional links to EPA definitions of terms and user-friendly examples of P2 implementation success stories.

DELIVERABLE SCHEDULE

TASKS	ASSIGNMENTS	DUE DATE
1	Prepare workplan	15 calendar days after receipt
2	Complete 1 st draft of TRI tribal filters visualization project for National Analysis using RY 2015 data.	August 11, 2017
2	Complete 2 nd draft of TRI tribal filters visualization project for National Analysis using RY 2015 data.	August 28, 2017
3	Complete all final TRI Data Uses by Communities project deliverable <i>(if it was not already completed)</i>	

under WA 3-29 prior to the start of this new work assignment).

August 30, 2017

- | | | |
|---|--|--------------------|
| 4 | Agree upon revisions to the TRI data access interface on the TRI website homepage (and possible revisions to "TRI for Communities" webpage interface) to be made publicly available upon release of the TRI 2016 National Analysis--with relevant TRIPD and OEI staff <i>(depending upon funding and technical direction).</i> | September 8, 2017 |
| 2 | Complete 3 rd draft of TRI tribal filters visualization project for National Analysis using RY 2015 data. | September 11, 2017 |
| 5 | Complete 1 st draft of proposed user-friendly enhancements to TRI Guide-ME <i>(depending upon funding and technical direction).</i> | September 18, 2017 |
| 2 | Complete final version of TRI tribal filters visualization project for National Analysis using RY 2016 data (for QA process). | September 27, 2017 |
| 5 | Complete final version of enhancements to TRI Guide-ME <i>(depending upon funding and technical direction).</i> | September 28, 2017 |
| 4 | Complete proposed design approach and requirements re: revisions to the TRI data access interface on the TRI website homepage (and possible revisions to "TRI for Communities" webpage interface) to be publicly available upon release of the TRI 2016 National Analysis <i>(depending upon funding and technical direction).</i> | October 2, 2017 |
| 2 | Complete TRI RY 2016 tribal reporting data accuracy project support <i>(depending upon funding and technical direction).</i> | October 20, 2017 |
| 4 | Finalize all work associated with revisions to the TRI data access interface on the TRI website homepage (and possible revisions to "TRI for Communities" webpage interface) to be publicly available upon release of the TRI 2016 National Analysis <i>(depending upon funding and technical direction).</i> | December 15, 2017 |
| 2 | Complete 1 st draft of one or more new TRI tribal program outreach/educational resources (such as a TRI tribal program fact sheet, brochure, slide presentation, training materials or a video) <i>(depending upon funding and technical direction).</i> | February 9, 2018 |

- 6 Complete 1st draft of user-friendly enhancements to TRI P2 Search Tool (*depending upon funding and technical direction*). March 9, 2018
- 2 Complete draft final version of one or more new TRI tribal program outreach/educational resources (*depending upon funding and technical direction*). April 13, 2018
- 6 Complete final version of user-friendly enhancements to TRI P2 Search Tool (*depending upon funding and Technical direction*). May 11, 2018
- 2 Complete final version of one or more new TRI tribal program outreach/educational resources (such as a TRI tribal program fact sheet, brochure, slide presentation, training material or video) (*depending upon funding and technical direction*). June 8, 2018

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 4-32			
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:			
Contract Number EP-C-13-039			Contract Period 09/11/2013 To 07/31/2018 Base Option Period Number 4			Title of Work Assignment/SF Site Name Perchlorate and Lead and Coppe			
Contractor ABT ASSOCIATES INC.				Specify Section and paragraph of Contract SOW A2					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval						Period of Performance From 08/01/2017 To 07/31/2018			
Comments:									
<div style="display: flex; justify-content: space-between;"> <input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund </div>									
Note: To report additional accounting and appropriations data use EPA Form 1900-69A.									
SFO (Max 2) <input type="checkbox"/>									
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars) (Cents)	Site/Project (Max 8)	Cost Org/Code
1									
2									
3									
4									
5									
Authorized Work Assignment Ceiling									
Contract Period:		Cost/Fee:		LOE:					
09/11/2013 To 07/31/2018				0					
This Action:				2,056					
Total:				2,056					
Work Plan / Cost Estimate Approvals									
Contractor WP Dated:				Cost/Fee		LOE:			
Cumulative Approved:				Cost/Fee		LOE:			
Work Assignment Manager Name Erik Helm <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number: 202-566-1049 FAX Number:			
Project Officer Name Ahmar Siddiqui <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number: 202-566-1044 FAX Number:			
Other Agency Official Name Nicholas Bisher <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number: FAX Number:			
Contracting Official Name Kathleen Rechenberg <div style="display: flex; justify-content: space-between; margin-top: 10px;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number: 513-487-2853 FAX Number:			

WORK ASSIGNMENT

I. **Title:** Perchlorate and Lead and Copper Rulemaking, and SafeWater Model Support

Contractor: Abt Associates

Contract No.: EP-C-13-039

II. **Work Assignment Number:** 4-32

III. **Estimated Period of Performance:** Date of issuance through July 31, 2018

IV. **Estimated Level of Effort:** 2,056 hours

V. **Key EPA Personnel:**

Work Assignment Contracting Officer Representative (WACOR):

Erik Helm

OGWDW/SRMD (4607M)

202/566-1049

202/564-3758 (fax)

Helm.erik@epa.gov

Alternate Work Assignment Contracting Officer Representative (Alt. WACOR):

Ahmed Hafez

OGWDW/SRMD (4607M)

202/564-1944

202/564-3758 (fax)

hafez.ahmed@epa.gov

VI. **Background and Purpose:**

Perchlorate

Perchlorate is an inorganic ion (ClO_4^-) occurring primarily as a salt. Perchlorate occurs naturally in calcium carbonate deposits in arid regions (e.g., parts of the western US) and via atmospheric processes. People are exposed to perchlorate through both food and drinking water. Perchlorate interferes with the thyroid gland by inhibiting iodide uptake. Reduced iodide uptake by the thyroid impacts the amount of thyroid hormones produced. Thyroid hormones are critical for normal growth and development. Poor iodide uptake and subsequent impairment of thyroid function in pregnant women are linked to delayed development and decreased learning capacity in infants and children.

On February 11, 2011 (76 FR 7762), the Environmental Protection Agency (EPA) announced its decision to regulate perchlorate based on its finding that perchlorate meets the Safe Drinking Water Act's (SDWA) three criteria for regulating a contaminant:

- Perchlorate may have adverse health effects,

- There is a substantial likelihood that perchlorate occurs with frequency at levels of health concern in public water systems, and
- There is a meaningful opportunity to reduce risk through a drinking water regulation.

In accordance with SDWA, the Agency requested EPA's Science Advisory Board (SAB) to review how to consider available data in deriving a Maximum Contaminant Level Goal (MCLG). The MCLG is a non-enforceable goal defined under the SDWA as "the level at which no known or anticipated adverse effects on the health of persons occur and which allows an adequate margin of safety" for a perchlorate National Primary Drinking Water Regulation. The SAB released its final report on May 29, 2013 and recommended that EPA "derive a perchlorate MCLG that addresses sensitive life stages through physiologically-based pharmacokinetic/pharmacodynamic (PBPK/PD) modeling."

Food and Drug Administration (FDA) and EPA scientists developed a PBPK/PD model to determine under what conditions of iodine nutrition and exposure to perchlorate across sensitive lifestages would experience low serum free and total thyroxine (hypothyroxinemia).

EPA began the process of deriving a perchlorate MCLG by linking model output to information from literature to account for adverse health outcomes under work assignment (WA) 4-96 of Abt Contract EP-W-11-003 and WA 2-32 of Abt Contract EP-C-13-039. Under this work assignment the contractor shall continue to assist EPA in the development of the benefits and costs of the Perchlorate Rulemaking. In order to estimate the costs and benefits of the rule the contractor shall update EPA's SafeWater modeling system (developed and updated under several previous contracts and work assignment ending with WA 3-32 of contract EP-C-13-039 – no previous work shall be duplicated under this WA) to include the dose response information that will be developed along with the Perchlorate MCLG calculations.

Lead and Copper Rule Long Term Rule Revision

Under the Safe Drinking Water Act (SDWA), EPA sets public health goals and enforceable standards for drinking water quality. The Lead and Copper Rule (LCR) is a treatment technique rule. Instead of setting a maximum contaminant level (MCL) for lead or copper, the rule requires public water systems (PWSs) to take certain actions to minimize lead and copper in drinking water, to reduce water corrosivity and prevent the leaching of these metals from the premise plumbing and drinking water distribution system components and when that isn't enough, to remove lead service lines.

EPA is currently in the process of evaluating potential changes to the existing lead and copper rule. These regulatory changes may consist of modifications to the tiering criteria for lead and copper sampling sites, changes to requirements for lead service line replacement, changes and/or additions to existing corrosion control treatments, modifications to existing water quality parameters, public education requirements, and the determination of a health based lead tap sample threshold of concern referred to as the Household Action Level.

Under WAs 2-32 and 3-32, an initial set of analyses was performed to calculate the drinking water concentration of lead resulting in the defined increase in the probability of elevated blood lead levels. Several iterations of this approach have been used with varying input parameters to

investigate a health-based household action level. A number of additional analyses and approaches may be required based on changing regulatory requirements and EPA comments.

Under this work assignment the contractor shall conduct all analyses requiring the collection and manipulation of data and models in accordance with the EPA approved quality assurance (QA) project plan that will be based on Task 2 quality assurance project plan (QAPP) language. The QAPP shall describe the procedures for assuring the quality of the primary and secondary environmental and economic data used for this work assignment.

VII. General Requirements of the Work Assignment and Schedule

Confidential Business Information: During the course of the work assignment, the contractor will not be accessing and evaluating CBI.

Budget Reporting: The contractor under this work assignment is required to report to the EPA WACOR and Contract Level Contracting Officer Representative (CL-COR) when 75 percent of the total work assignment funding amount has been depleted. The contractor must also report to the EPA WACOR when 75 percent of the approved Workplan budget has been depleted.

Identification as Contracting Staff: To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and prior to the start of any meeting. Contractor personnel are prohibited from acting as the Agency's official representative. When speaking with the public, the contractor should refer all interpretations of policy to the EPA WACOR.

Limitation of Contractor Activities: The contractor shall submit drafts of all deliverables to the EPA WACOR for review prior to submission of the final product. These drafts will clearly specify the methods, procedures, considerations, assumptions, relevant citations, data sources and data that support any conclusions and recommendations. The contractor shall incorporate all EPA WACOR comments into all final deliverables, unless otherwise agreed upon by the EPA WACOR. The contractor shall adhere to all applicable EPA management control procedures as implemented by the EPA Contracting Officer (CO), EPA CL-COR, and EPA WACOR.

Quick Response: Under this Performance Work Statement the contractor may be required to provide information for use by EPA for quick responses and analyses of options, issues, and policy decisions. Quick responses are those which require completion in one to five working days.

Travel: It is not anticipated that the contractor shall be required to travel under this work assignment.

Deliverable Formatting: All memos, draft comments, summaries and responses, and chapters are to be provided in electronic form using Word and/or Excel/Access, ArcView, or, in special cases another software program agreed to by EPA. Memos are to be written in a manner which will

make them easy to turn into draft chapters for the Final Report. For deliverables that are in Word or pdf versions of Word documents, that are intended to be shared with management or the public, the contractor shall use decimal align in all tables containing columns of numbers of varying digits, whether decimal places are reported or not. All final materials, e.g., memos, chapters, etc. are to be prepared only after receiving written technical direction from the EPA WACOR and will be formatted to be in compliance with the Section 508 Amendment to the Rehabilitation Act of 1973.

Quality Assurance: Tasks 3 through 5 in this WA require the use of secondary data. Consistent with the Agency's QA requirements, the contractor must prepare a complete Quality Assurance QAPP to assure the quality of the data used under this WA. The contractor shall use the QAPP completed under task 2 of WA 2-32 on contract EP-C-13-039 for this purpose. The QA requirements must be addressed in the work plan and monthly progress reports as specified under Task 1, below.

VIII. Performance Work Statement

The EPA WACOR will review all deliverables in draft form and provide revisions and/or comments to the contractor. The contractor shall prepare the final deliverables incorporating the EPA WACOR's comments.

Task 1 - Prepare Workplan

The contractor shall prepare a workplan within 15 calendar days of receipt of the work assignment. The workplan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, a detailed cost estimate by task, and a staffing plan. In addition, the workplan shall include the requirement that all electronic and information technology (EIT) and all EIT deliverables be Section 508 compliant in accordance with the policies referenced at <http://www.epa.gov/accessibility/>. The contractor shall use the QAPP completed under task 2 of WA 2-32 on contract EP-C-13-039, and ensure the quality of secondary data used to complete tasks 3 through 5.

The EPA WACOR, the CL-COR and the CO will review the workplan. However, only the CO can approve/disapprove, suggest revisions, or change the workplan. Official revisions will be given to the contractor by the CO. The contractor shall prepare a revised workplan incorporating the CO's comments, if required.

A weekly update call with the EPA WACOR and a monthly progress report will be required for this work assignment to discuss progress on deliverables, costs, and other potential issues.

The Monthly Progress Report shall indicate, in a separate QA section, whether significant QA issues have been identified and how they are being resolved. Monthly reports must include a table with the invoice LOE and costs broken out by the tasks.

Deliverables and schedule under Task 1

1.a. Workplan within 15 calendar days of receipt of work assignment.

Task 2 - Quality Assurance

Tasks 3 through 5 in this work assignment require the use of secondary data. Collection, use, and analysis of data will be identical to the procedures described in the QAPP completed under task 2 of WA 2-32 on contract EP-C-13-039, consistent with the Agency's QA requirements. EPA has determined that this approved QAPP is appropriate for the tasks outlined in this Performance Work Statement. The work described for Tasks 3, 4, and 5 in this work assignment are covered by Task 2 in the original QAPP (WA 2-32). Based on this determination, the contractor is not required to modify the approved QAPP for this action. The project specific QA requirements must be addressed in the work plan and monthly progress reports as specified under Task 1.

Deliverables and schedule under Task 2

None.

Task 3 – Perchlorate Rule

Task 3.1 – Development of new health and economic impact assessment methodologies for the Perchlorate Proposed Rule

The contractor shall update the Perchlorate Notice of Proposed Rulemaking (NPRM) analyses completed under Contract EP-C-07-023, WAs 5-20 and 6-20. This work is to be done in preparation for the development of chapters of the technical support document (TSD) for the economic costs, impacts, and benefits of the proposed rulemaking (Task 3.4).

It may be necessary to make significant changes to the existing methodology or databases, and explore new types of analysis (i.e. changes to the economic benefits of the proposed rule that result from the development of the MCLG. These changes may require major updates to the SafeWater model and or other health and economic analysis methodologies previously developed in WA 5-20 and 6-20. The exact nature and timing of these changes cannot be foreseen at this time. Making significant changes to existing methodology or databases or exploration of new lines of inquiry will follow the process outlined below:

- (1) The EPA WACOR will issue written technical direction to produce a short memorandum, table, or PowerPoint outlining the details of the new analysis required. The length of the document is expected to be less than 5 pages unless otherwise specified in the technical direction.

(2) Once the EPA WACOR has reviewed the document and a determination is made as to whether to move forward with the changes to existing methods or data or conduct a new analysis (which would give additional insight into and not supplant the more general goals of the economic analysis outlined in this work assignment), the EPA WACOR will give written technical direction to the contractor on how to proceed. If it is decided that new work should be conducted, then the technical direction will include any EPA changes to the contractor's proposed approach and specific deadlines for completion of the work.

Although a precise number of these potential significant changes to the existing NPRM methodology or databases, and/or explorations of new types of analysis cannot be given at this time, EPA expects that 3 significant changes to the existing methodology or databases, and new types of analysis will be required. The general time frame for the new analysis "scoping" deliverables will be on the order of 7 days after issuance of technical direction.

Under this task, the contractor shall conduct potential rule option assessments that will be used by EPA to determine the three to five primary regulatory options to be presented in the final economic TSD (Task 3.4). These scoping option assessment results should be reported to the EPA in tabular form, without a significant amount of written explanation and interpretation around the analysis results, unless otherwise requested by the EPA WACOR in written technical direction. The EPA WACOR will issue written technical direction specifying the options to be assessed and the completion date. The options to be assessed will be developed over time as part of the Agency's option selection, final agency review, and interagency review processes leading up to the proposed rule signature date. New options or changes to existing options may result from changes in the technical data, engineering analysis, and/or economic assessment methodology and, comments from Office of Water (OW) management, agency workgroup members, other federal agencies and Office of Management and Budget (OMB). Although a precise number of these option assessments cannot be given at this time, EPA expects the number to be between 5 and 10. For the purpose of estimating workplan costs assume that 25% of the option assessments will require turn around on the order of 7 days, the remaining 75% may be "quick response" deliverables particularly as we move through the Agency and Inter-agency review process.

Once the EPA WACOR reviews an option assessment, changes in the scope or methodology may be communicated through technical direction. The technical direction will also include a due date for the updated option assessment.

Deliverables and schedule under Task 3.1

3.1.a. Methodology and Data Modification Memorandum deliverables and due dates TBD by written technical direction. The contractor will normally be given 7 days or more to complete these deliverables.

3.1.b. EPA WACOR approved changes to Methodology and Data Modifications due dates TBD by written technical direction.

3.1.c. Planned Option Assessment deliverables and due dates TBD by written technical

direction. The contractor will normally be given 7 days or more to complete these deliverables.

3.1.d. Quick Response Option Assessment deliverables and due dates TBD by written technical direction. The contractor will be given less than 7 days to complete these deliverables.

Task 3.2 – Development of the Draft Technical Support Document (TSD) for the Economic Costs, Impacts, and Benefits of the Perchlorate Proposed Rule

Under this task, the contractor shall develop a draft Economic Analysis TSD. This report will revise the Baseline Analysis, Cost Analysis, and Benefits Analysis chapters of the NPRM Economic Analysis TSD written under WA 5-20 and 6-20 (EP-C-07-023). Drafts of the remaining chapters shall be written and submitted to the EPA WACOR for review. The chapter structure of the TSD shall remain the same as that developed in WA 5-20. The chapters of the economic analysis TSD will be:

- Executive Summary
- Need for the Rule
- Consideration of Regulatory Alternatives
- Baseline Analysis
- Health Effects
- Benefits Analysis
- Economic Impact and Cost Analysis
- Comparison of Benefits and Costs
- Administrative Requirements

The Administration Requirements chapter includes the Regulatory Flexibility Act (RFA) Analysis, the Unfunded Mandates Reform Act (UMRA) Analysis, and the Executive Order Analyses (E.O. 12866, 13132, 13175, 13045, 13211, 12898, and 13158).

The TSD will contain the assessment of the three to five proposed rule options which are to be determined through the EPA OW proposed rule process. These primary options will be defined by written Technical Direction.

The draft TSD report chapters shall be provided to the EPA WACOR for an initial review.

Once the EPA WACOR completes the initial review of the draft TSD report chapters and provides revisions and/or comments to the contractor, the contractor shall incorporate the changes into the draft TSD report chapters.

Under this task, the draft Economic Analysis TSD report chapters may also need to be revised further in response to public comments, changes in the technical data, comments from OW management, agency workgroup members, and OMB, as well as changes to the proposed rule regulatory options and/or technology efficacy results. These changes are expected to occur in several waves as the proposed rule moves through the Agency and Inter- agency review process. All changes will be given to the contractors by written Technical Direction. After each set of

significant revisions initiated by technical direction, the contractor shall supply that portion or chapter of the TSD to the EPA WACOR for further review.

The Final Economic Analysis TSD report will be due at the time of the Administrator's Signature or the Proposed Perchlorate Rule, currently scheduled for October 2018, which is after the end of this work assignment's period of performance. Therefore, the contractor shall prepare final draft versions of the Economic Analysis TSD report chapters that have been drafted and modified during the period of performance, incorporating the EPA WACOR's comments at the end of the period of performance.

Deliverables and schedule under Task 3.2

3.2.a. Second Drafts of the Baseline Analysis, Cost Analysis, and Benefits Analysis chapters due four months after workplan approval, unless delayed by written technical direction.

3.2.b. First Drafts of the remaining TSD chapters due dates TBD by written technical direction.

3.2.c. Final Draft Economic Analysis TSD chapters due date TBD by written technical direction.

Task 4 - Lead and Copper Rule (LCR)

Task 4.1 – Lead and Copper Long Term Revisions Rule Support

The contractor shall, based on technical direction given by the EPA WACOR, provide technical support related to health risk assessment, and economic benefit assessment issues associated with the rulemaking. Such support may include responding to management questions about economic issues, preparing briefing and meeting materials (which may include but are not limited to short briefing documents and PowerPoint presentations). The contractor may also be requested to participate in and/or conduct briefings, assisting Agency economists in their review of analyses conducted by EPA and its contractors, providing technical review of materials prepared for the rulemaking by Agency staff, and assist in the development of the rulemaking record. For planning purposes, EPA expects that there will be a need for between 4 and 6 short briefing documents and the contractor shall participate in 1 to 2 briefings. The contractor may also be required to review and summarize 1 to 2 documents prepared by outside groups and/or other EPA offices.

The contractor shall prepare draft deliverable material for EPA WACOR review and approval.

Once the EPA WACOR reviews the draft materials and provides revisions and/or comments to the contractor, the contractor shall prepare a final version of the materials incorporating the EPA WACOR's comments.

Deliverables and schedule under Task 4.1

- 4.1.a. Draft deliverables and due dates TBD listed or delayed by written technical direction.**
- 4.1.b. Final deliverable due dates listed or delayed by written technical direction.**

Task 4.2 – Revisions to the Household Action Level (HAL) for the Lead and Copper Long Term Revisions Rule

Under WA 2-32 and 3-32 on contract EP-C-13-039, the contractor developed a draft HAL report for the LCR. The HAL value is being developed in response to the National Drinking Water Advisory Council's recommendations for the revision of the LCR. The Household Action Level will be a tap sample threshold value above which the public water utility will inform both the residents and local health department official that a site-specific assessment of lead exposure impacts to the residents is advisable. The report has undergone external peer review. The contractor shall revise the report and supporting analysis based on technical direction given by the EPA WACOR, which will be issued based on peer reviewer's comments. The EPA WACOR's technical direction may include the modification of the previously developed methods and development and/or statistical transformation of the input data used in deriving the LCR's Household Action Level. Additional updates to the Agency's Integrated Exposure Uptake Biokinetic (IEUBK) model maybe required as part EPA's modifications to the methods that were peer reviewed. If EPA's Office of Research and Development (ORD) develops significant updates to their Stochastic Human Exposure and Dose Simulation (SHEDS) exposure model which is linked to the IEUBK model as a result of peer reviewer comments it may be necessary to carry those adjustments into the methodologies developed by the contractor, this work would be done based on technical direction from the EPA WACOR.

For planning purposes, assume that there will be one draft of the HAL report prior to the final report.

Deliverables and schedule under Task 4.2

- 4.2.a. Additional draft of the Household Action Level Report due date TBD based on EPA WACOR comments.**
- 4.2.b. Final deliverable due date listed or delayed by written technical direction.**

Task 4.3 – Development of new health and economic impact assessment methodologies for the Lead and Copper Long Term Revisions Rule

This work is to be done in preparation for the development of chapters of the TSD for the economic costs, impacts, and benefits of the proposed rulemaking (Task 4.4).

It may be necessary to make significant changes to the existing methodology or databases, and explore new types of analysis (i.e. changes to the economic benefits of the proposed rule that result from the development of the Household Action Level (Task 4.2 above)). These changes may require major updates to the SafeWater model and or other health and economic analysis

methodologies previously developed in WA 5-20 and 6-20 and WA 3-32. The exact nature and timing of these changes cannot be foreseen at this time. Making significant changes to existing methodology or databases or exploration of new lines of inquiry will follow the process outlined below:

1. The EPA WACOR will issue written technical direction to produce a short memorandum, table, or PowerPoint outlining the details of the new analysis required. The length of the document is expected to be less than 5 pages unless otherwise specified in the technical direction.
2. Once the EPA WACOR has reviewed the document and a determination is made as to whether to move forward with the changes to existing methods or data or conduct a new analysis (which would give additional insight into and not supplant the more general goals of the economic analysis outlined in this work assignment), the EPA WACOR will give written technical direction to the contractor. If it is decided that new work should be conducted, then the technical direction will include any EPA changes to the contractor's proposed approach and specific deadlines for completion of the work.

Although a precise number of these potential significant changes to the existing NPRM methodology or databases, and/or explorations of new types of analysis cannot be given at this time, EPA expects that 3 significant changes to the existing methodology or databases, and new types of analysis will be required. The general time frame for the new analysis "scoping" deliverables will be on the order of 7 days after issuance of technical direction.

Under this task, the contractor shall conduct potential rule option assessments that will be used by EPA to determine the three to five primary regulatory options to be presented in the final economic TSD (Task 4.4). These scoping option assessment results should be reported to the EPA in tabular form, without a significant amount of written explanation and interpretation around the analysis results, unless otherwise requested by the EPA WACOR in written technical direction. The EPA WACOR will issue written technical direction specifying the options to be assessed and the completion date. The options to be assessed will be developed over time as part of the Agency's option selection, final agency review, and interagency review processes leading up to the proposed rule signature date. New options or changes to existing options may result from changes in the technical data, engineering analysis, and/or economic assessment methodology and, comments from OW management, agency workgroup members, other federal agencies and OMB. Although a precise number of these option assessments cannot be given at this time, EPA expects the number to be between 5 and 10. For the purpose of estimating workplan costs assume that 25% of the option assessments will require turn around on the order of 7 days, the remaining 75% may be "quick response" deliverables particularly as we move through the Agency and Inter-agency review process.

Once the EPA WACOR reviews an option assessment, changes in the scope or methodology may be communicated through technical direction. The technical direction will also include a due date for the updated option assessment.

Deliverables and schedule under Task 4.3

4.3.a. Methodology and Data Modification Memorandum deliverables and due dates TBD by written technical direction. The contractor will normally be given 7 days or more to complete these deliverables.

4.3.b. EPA WACOR approved changes to Methodology and Data Modifications due dates TBD by written technical direction.

4.3.c. Planned Option Assessment deliverables and due dates TBD by written technical direction. The contractor will normally be given 7 days or more to complete these deliverables.

4.3.d. Quick Response Option Assessment deliverables and due dates TBD by written technical direction. The contractor will be given less than 7 days to complete these deliverables.

Task 4.4 – Update the SafeWater Model to incorporate distribution system impact costs and lead child and adult benefits assessment

The contractor shall, based on written technical direction from the EPA WACOR, continue the work started under WA 2-32 and 3-32 on contract EP-C-13-039, and update the SafeWater model to support rule cost components that occur in water utility distribution systems. The LCR will have regulatory options that might require proactive lead service line replacement and sampling at households. Previous versions of the SafeWater cost model looked only at entry point treatment costs. Alterations to the model must be made to allow for an assessment of costs that are not tied to entry point treatment. Additional modeled strata (e.g. systems with and without lead service lines) will also need to be added to the cost framework.

The contractor shall update the benefits model, based on written technical direction, to include appropriate lead dose response function information for child intelligence quotient (IQ) decrements and adult cardiovascular impacts. Additional health endpoint data may also become available based on work being conducted by EPA's National Center for Environmental Economics. If new dose response relationships are developed, the EPA WACOR will give written technical direction to incorporate the additional health endpoint to the benefits analysis. At this time, EPA estimates that only two new endpoints will be developed (ADHD and low birthweight).

For planning purposes, the contractor shall assume that there will be four drafts of the cost model prior to the final cost model, and four drafts of the benefits model prior to the final benefits model.

Deliverables and schedule under Task 4.4

4.4.a. Option Selection Draft SafeWater cost model due August 15, 2017, or modified by written technical direction.

4.4.b. Additional Draft SafeWater cost model changes and due dates TBD listed or

modified by written technical direction.

4.4.c. Final SafeWater cost model changes due dates listed or modified by written technical direction.

4.4.d. Option Selection Draft SafeWater benefits model, including IQ and adult cardiovascular impacts, due August 31, 2017, or modified by written technical direction.

4.4.e. Draft SafeWater benefit model changes and due dates TBD listed or modified by written technical direction.

4.4.f. Final SafeWater benefit model changes due dates listed or modified by written technical direction.

Task 4.5 – Development of Chapters of the Draft Technical Support Document for the Economic Costs, Impacts, and Benefits of the Lead and Copper Long Term Revisions Proposed Rule

Under this task, the contractor shall develop chapters and sections of chapters for a draft Economic Analysis TSD. The chapters of the economic analysis TSD to be developed will be:

- Health Effects
- Benefits Analysis
- National Economic Impact and Cost Analysis
- Comparison of Benefits and Costs

Sections of the economic baseline chapter supporting the cost benefit work and the administrative requirements chapter will also need to be developed. The Administration Requirements chapter sections include the RFA Analysis, the UMRA Analysis, and the Executive Order 12866.

The TSD will contain the assessment of the three to five proposed rule options which are to be determined through the EPA OW proposed rule process. These primary options will be defined by written Technical Direction.

The draft TSD report chapters and sections shall be provided to the EPA WACOR for an initial review.

Once the EPA WACOR completes the initial review of the draft TSD report chapters and sections and provides revisions and/or comments to the contractor, the contractor shall incorporate the changes into the draft TSD report chapters and sections.

Under this task, the draft Economic Analysis TSD report chapters and sections may also need to be revised further in response to public comments, changes in the technical data, comments from OW management, agency workgroup members, and OMB, as well as changes to the proposed rule regulatory options and/or technology efficacy results. These changes are expected to occur in several waves as the proposed rule moves through the Agency and Inter- agency review process. All changes will be given to the contractors by written Technical Direction. After each set of significant revisions initiated by technical direction, the contractor shall supply that portion

or chapter of the TSD to the EPA WACOR for further review.

The Final Economic Analysis TSD chapters sections will be due at the time of the Administrator's Signature or the Proposed Lead and Copper Long Term Rule Revision, currently scheduled for January 2018.

Deliverables and schedule under Task 4.5

4.5.a. First Drafts of the Baseline Analysis, Cost Analysis, and Benefits Analysis chapters due September 29, 2017, unless delayed by written technical direction.

4.5.b. First Drafts of the remaining TSD chapters due October 13, unless delayed by written technical direction.

4.5.c. Final Draft Economic Analysis TSD chapters due date TBD by written technical direction.

Task 4.6 – Evaluate changing nutrient loads from corrosion control on wastewater treatment and receiving water bodies

The contractor shall continue the work started under WA 3-32 on contract EP-C-13-039. Under the LCR, EPA requires large water systems to use corrosion control treatments for drinking water. Orthophosphate is a corrosion inhibitor that is generally used by these systems. Under the long-term revisions to the LCR, EPA is considering expanding the requirement for corrosion control treatment to medium and/or small systems that have not previously installed corrosion control treatment, which could substantially increase the amount of phosphorus that flows into wastewater treatment plants, and thus to receiving water bodies. Discharge from wastewater treatment facilities, with little to no treatment for phosphorus, is already a significant source of nutrient loading in surface waters throughout the country, in part because only certain regions have National Pollution Discharge Elimination (NPDES) permitting limits for total phosphorus.

Under this task, the contractor shall evaluate the potential impacts to Waste Water Treatment Plants (WWTP) for phosphorous removal and discharges from WWTPs to receiving water bodies under a set of LCR regulatory assumptions that the EPA WACOR will supply to the contractor. As part of this analysis, the contractor shall:

- Identify those areas that do not currently have NPDES limits for total phosphorus but are likely to be candidates for limits or increased monitoring of total phosphorus.
- Identify areas in which receiving waters from WWTP are likely to see substantial increases in phosphorus loads;
- Discuss the potential environmental impacts of additional phosphorus contribution to receiving water bodies; and
- Identify metropolitan areas that are unlikely to be able to meet NPDES permit limitations for nutrients/total phosphorus based on the assumptions provided by EPA.
- Analyze the economic costs of any environmental harm to receiving bodies, given changes in nutrient loading that can be identified by proposed rule requirements.

Once the EPA WACOR has commented on the approaches and models to be developed for assessing the impact of the nutrients, the contractor shall develop a draft report documenting the complete nutrient assessment process.

Once the EPA WACOR reviews the draft materials and provides revisions and/or comments to the contractor, the contractor shall prepare a final version of the materials incorporating the EPA WACOR's comments.

For planning purposes, assume that there will be three drafts of the nutrient impact assessment report prior to the final report.

Deliverables and schedule under Task 4.6

4.6.a. Drafts of the Nutrient Impact Assessment Report due date TBD based on EPA WACOR comments.

4.6.b. Final Nutrient Impact Assessment Report deliverable due dates listed or delayed by written technical direction.

Task 5 - Provide Technical Support for Rulemaking Activities

The contractor shall provide technical support related to health assessment, and economic cost and benefit assessment issues associated with the Perchlorate, Lead and Copper, Carcinogenic Volatile Organic Compounds, and Fluoride rulemakings. Such support may include conducting SafeWater runs, developing RFA reports, developing health effects documents, responding to management questions about economic and health impact issues, preparing briefing and meeting materials (which may include but are not limited to short briefing documents, PowerPoint presentations, and memoranda). The contractor may also be requested to participate in and/or conduct briefings, assisting Agency economists in their review of analyses conducted by EPA and its contractors, providing technical review of materials prepared for the rulemaking by Agency staff, and assist in the development of the rulemaking record.

The contractor shall prepare draft deliverable material for EPA WACOR review and approval.

Once the EPA WACOR reviews the draft materials and provides revisions and/or comments to the contractor, the contractor shall prepare a final version of the materials incorporating the EPA WACOR's comments.

For planning purposes, the contractor shall assume 15 quick turnaround tasks that would include document review and summarizing, single spreadsheets, and bulleted memos, and 5 tasks that have longer timeframes to complete which would include long memos and multipage spreadsheets.

Deliverables and schedule under Task 5

5.a. Draft deliverables and due dates TBD listed or modified by written technical direction.

5.b. Final deliverable due dates listed or modified by written technical direction.

EPAUnited States Environmental Protection Agency
Washington, DC 20460**Work Assignment**

Work Assignment Number

4-35

☐ Other☐ Amendment Number:

Contract Number

EP-C-13-039

Contract Period 09/11/2013 To 07/31/2018

Base

Option Period Number 4

Title of Work Assignment/SF Site Name

Linking WQ models to Econ

Contractor

ABT ASSOCIATES INC.

Specify Section and paragraph of Contract SOW

Sects. A.2.2, A.6, B.4, C.1, C.7

Purpose:



Work Assignment



Work Assignment Close-Out



Work Assignment Amendment



Incremental Funding



Work Plan Approval

Period of Performance

From 08/01/2017 To 07/31/2018

Comments:



Superfund

Accounting and Appropriations Data



Non-Superfund

SFO
(Max 2)

Note: To report additional accounting and appropriations data use EPA Form 1900-69A.

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

Contract Period:

Cost/Fee:

LOE: 0

09/11/2013 To 07/31/2018

This Action:

1,830

Total:

1,830

Work Plan / Cost Estimate Approvals

Contractor WP Dated:

Cost/Fee

LOE:

Cumulative Approved:

Cost/Fee

LOE:

Work Assignment Manager Name Matt Heberling

Branch/Mail Code:

Phone Number: 513-569-7917

FAX Number:

(Signature)

(Date)

Project Officer Name Ahmar Siddiqui

Branch/Mail Code:

Phone Number: 202-566-1044

FAX Number:

(Signature)

(Date)

Other Agency Official Name

Branch/Mail Code:

Phone Number:

FAX Number:

(Signature)

(Date)

Contracting Official Name Kathleen Rechenberg

Branch/Mail Code:

Phone Number: 513-487-2853

FAX Number:

(Signature)

(Date)

WORK ASSIGNMENT

I. Title: Linking Water Quality Models to Economic Models

Contractor: Abt Associates

Contract No.: EP-C-13-039

II. Work Assignment Number: 4-35

III. Estimated Period of Performance: Date of Issuance through July 31, 2018

IV. Estimated Level of Effort: 1830

V. Key EPA Personnel:

Work Assignment Contracting Officers Representative (WACOR):

Matthew T. Heberling
ORD/NRMRL/STD
513/569-7917

Alternate Work Assignment Contracting Officers Representative:

Joel Corona
OW/WPS
202/564-0006

VI. Background and Purpose:

The 1972 Clean Water Act (CWA) directs the Environmental Protection (EPA) to develop national technology-based regulations for categories of industries that discharge pollutants directly to surface waters (effluent guidelines) or that discharge pollutants indirectly through sewage treatment plants (pretreatment standards). The CWA directs EPA to develop national technology-based regulations for new industrial facilities (new source performance standards).

Under Executive Orders 12866 and 13563, EPA is required to estimate the potential benefits and costs to society. As such, the purpose of this Work Assignment (WA) is to support EPA's efforts to improve its ability to monetize the benefits associated with these regulatory actions.

Under this work assignment, the contractor shall conduct all analyses requiring the collection and manipulation of data and models in accordance with the EPA approved quality assurance (QA) project plan (QAPP) that will be based on Task 2 QAPP language. The QAPP shall describe the procedures for assuring the quality of the primary and secondary environmental and economic data used for this work assignment.

In carrying out the tasks specified in this work assignment, the contractor may be called upon to build upon and continue work performed under WA 1-20, WA 2-20, WA 3-20, WA 2-35, and

WA 3-35 under this Contract EP-C-13-039, which supports the development of a national water quality benefits modeling framework. The work performed under this work assignment will not duplicate work conducted under the previous work assignments. For such a framework that will use a mix of original economic studies and benefits transfer approaches, understanding how to link water quality models and economic benefits will be an important step. In addition, EPA intends to do a comprehensive assessment of existing water quality models concerning how well they address EPA's current and anticipated water quality modeling needs. The assessment will account for each model's temporal and spatial prediction scale, scope or water types modeled, output parameters, and potential for interoperability with Office of Water's (OW) water quality modeling platform Hydrologic and Water Quality System (HAWQS). Finally, EPA intends to build off the draft memo that describes potential approaches for using available information to create a methodology for assessing surface water quality effects on property values at a national scale.

VII. General Requirements of the Work Assignment and Schedule

Confidential Business Information: During the course of the work assignment, the contractor will not be accessing and evaluating CBI.

Budget Reporting: The contractor under this work assignment shall report to the EPA WACOR and Contract Level Contracting Officers Representative (CL-COR) when 75 percent of the total work assignment funding amount has been depleted. The contractor must report to the EPA WACOR when 75 percent of the approved Workplan budget has been depleted.

Identification as Contracting Staff: To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and prior to the start of any meeting. Contractor personnel are prohibited from acting as the Agency's official representative. When speaking with the public, the contractor should refer all interpretations of policy to the EPA WACOR.

Limitation of Contractor Activities: The contractor shall submit drafts of all deliverables to the EPA WACOR for review prior to submission of the final product. These drafts shall clearly specify the methods, procedures, considerations, assumptions, relevant citations, data sources and data that support any conclusions and recommendations. The contractor shall incorporate all EPA WACOR comments into all final deliverables, unless otherwise agreed upon by the EPA WACOR. The contractor shall adhere to all applicable EPA management control procedures as implemented by the EPA Contracting Officer (CO), EPA CL-COR, and EPA WACOR.

Quick Response: Under this Performance Work Statement the contractor may be required to provide information for use by EPA for quick responses and analyses of options, issues, and policy decisions. Quick responses are those which require completion in one to five working days.

Travel: EPA does not anticipate the need for non-local travel by contractor employees and/or subcontractors to support the scope of this work assignment. Travel may be required under

amendments to this work assignment and, if it is, approval must be sought in advance from the EPA CL-COR.

Deliverable Formatting: All memos, draft comments, summaries and responses, and chapters are to be provided in electronic form using Word and/or Excel/Access, ArcView, or, in special cases another software program agreed to by EPA. Memos are to be written in a manner which will make them easy to turn into draft chapters for the Final Report. For deliverables that are in Word or pdf versions of Word documents, that are intended to be shared with management or the public, the contractor shall use decimal align in all tables containing columns of numbers of varying digits, whether decimal places are reported or not. All final materials, e.g., memos, chapters, etc. are to be prepared only after receiving written technical direction from the EPA WACOR and will be formatted to be in compliance with the Section 508 Amendment to the Rehabilitation Act of 1973.

VIII. Performance Work Statement

The EPA WACOR will review all deliverables in draft form and provide revisions and/or comments to the contractor. The contractor shall prepare the final deliverables incorporating the EPA WACOR's comments.

Task 1 - Prepare Work Plan

The contractor shall prepare a work plan within 15 calendar days of receipt of the work assignment signed by the Contracting Officer. The work plan shall outline, describe, and include the technical approach, resources, timeline and due dates for deliverables, a detailed cost estimate by task, and a staffing plan. The EPA WACOR, the CL-COR and the CO will review the work plan. However, only the CO can approve/disapprove, suggest revisions, or change the work plan. Official revisions will be given to the contractor by the CO. The contractor shall prepare a revised work plan incorporating the CO's comments, if required. To start this WA, a weekly update call with the EPA WACOR will be required for this work assignment to discuss progress on deliverables, costs, and other potential issues. The update may change to every two weeks, depending on the progress.

Deliverables and schedule under Task 1

- 1a. Workplan within 15 calendar days of receipt of work assignment.
- 1b. Weekly update call.

Task 2 - Quality Assurance

2.1 Background

Quality Assurance Project Plans are required under the Agency's Quality Assurance Policy CIO-2105, formerly EPA Order 5360.1A2 and implementing guidance CIO-2105-P-01-0. All projects

that involve the generation, collection, analysis and use of environmental data must have an approved QAPP in place prior to the commencement of the work. Examples of these environmental data operations are provided in **Table 1-1** below.

Table 1-1. Examples of work that involves the collection, generation, evaluation, analysis, or use of environmental data.

Item	Examples
Data	Includes field sampling information (sample location information, flow measurements, temperature, pH, physical observations, etc.), laboratory measurements (e.g., chemical, physical, biological, radiological measurements), data collected from questionnaires, economic data, census data, and any other types of existing data (i.e., data generated for a different purpose or generated by a different organization)
Data generation	Includes field studies, laboratory studies, and generation of modeling output
Data collection	Includes field surveys, questionnaire surveys, literature searches, and third party data
Data evaluation	Includes data inspection, review, assessment, and validation
Data analysis	Includes statistical, engineering, and economic analysis, and testing, evaluation, and validation of methods and models; database creation, data extraction and data manipulation
Data Use	Any use of data to support EPA decisions, regulations, policy, publications, or tools (including effluent guidelines, 304(m) program, standards, environmental assessments, and models, tools, or reports disseminated by EPA to assist other organizations in implementing environmental programs)

Note that QAPPs are required for the development or revision of models and software that support the generation, collection, evaluation, analysis, or use of data. (A model is set of equations and assumptions used to predict unknown data.) When existing models are used as a tool to generate or evaluate data, the project QAPP must describe the model and explain how it will be used and how its output will be evaluated to ensure the modeling effort meets the overall quality objectives for the project. Development or revision of new models must be supported by a QAPP that describes the objectives for the model, the quality criteria that will be applied to the model, and the procedures for evaluating whether the model meets those criteria.

2.2 QA Project Plan Requirements

The Contractor has previously prepared a contract-wide Programmatic QAPP (PQAPP) for Contract EP-C-13-039. This PQAPP describes, in a single document, information that is not site or time-specific, but applies throughout the program (i.e., the duration of the contract). When tasked with preparing the PQAPP, the Contractor was informed the PQAPP may need to be supplemented with project-specific details to support individual work assignments that involve the collection, generation, evaluation, analysis, or use of environmental data.

The activities in this work assignment involve gathering, evaluating, analyzing, and otherwise using existing environmental data (known as “secondary” use of data) and collecting primary data using EPA 308 Authority. However, EPA has determined the Contractor is operating under the existing PQAPP and the PQAPP addresses QA requirements for this work assignment. In support of this work assignment, the Contractor shall ensure the work plan provides enough detail to clearly describe:

- Specific objectives of the project(s) supported by this work assignment, including typical questions that must be answered when using existing sources of data to perform economic analyses in support of the Unconventional Oil and Gas (UOG) final rulemaking, centralized waste treatment (CWT) study, and Petroleum Refinery Study; and collecting primary financial and engineering information for 308 letters, and developing a survey for the CWT industry.
- The type of data to be gathered or used under this work assignment to support the project objectives—including data from search engines, federal databases, EPA data bases, letters from industry—as a well as a rationale for when those sources are appropriate and what data available in each will support the project.
- The quality objectives needed to ensure the data will support the project objectives, and
- The quality assurance/quality control (QA/QC) activities to be performed to ensure that any results obtained are documented and are of the type, quality, transparency, and reproducibility needed.

Table A1 in the Appendix demonstrates how the PQAPP addresses QA requirements for this work assignment. The contractor shall fill in staff roles to the Table A1 checklist under A.4 and make any additional detailed notes in the ‘explanatory comments’ column as requested by the WACOR. The contractor shall then include the completed Table A1 as a separate Appendix A to the workplan upon submittal to EPA. This Appendix A should be a stand-alone document if QA documentation is requested, therefore the Table A1 title must include the title of the WA, WA number, contract number, and what projects each covers. The WACOR has provided this information in the title, which the contractor may use to fulfill this requirement.

2.3 Additional QA Documentation Required

The EPA Quality Manual for Environmental Programs (CIO 2105-P-01-0, May 2000) requires published Agency reports containing environmental data to be accompanied by a readily identifiable section or appendix that discusses the quality of the data and any limitations on the use of the data with respect to their originally intended application. The EPA Quality Manual further requires Agency reports to be reviewed by the QA manager (or other authorized official) before publication to ensure that an adequate discussion of QA and QC activities is included. The purpose of the review is to ensure the reports provide enough information to enable a knowledgeable reader to determine if the technical and quality goals were met for the intended use of the data. Reports should include applicable statements regarding the use of any environmental data presented as a caution about possible misuse of the data for other purposes. For example, a Technical Support Document or Study Report must include a clear discussion of the quality management strategies (including the project goals and objectives, quality objectives and criteria, and QA/QC practices) that were employed to control and document the quality of data generated and used. These documents should discuss any deviations from procedures documented in the EPA-approved QAPP(s) supporting the project, the reasons for those deviations, any impact of those deviations had on data quality, and steps taken to mitigate data quality issues.

In support of this Agency requirement, all major deliverables (e.g., Technical Support Documents,

Study Reports, Analytical Methods) produced by the Contractor under this work assignment must include a discussion of the QA/QC activities that were performed to support the deliverable, and this discussion must provide a sufficient level of detail to allow the Office of Research and Development, Sustainable Technology Division's (STD) QA Coordinator (or designee) to determine if the QA/QC strategies implemented for the project sufficiently support the intended use of the data. Upon receipt, the EPA WACOR will review each applicable report and certify whether the Contractor has adhered to the QA requirements documented in the Contractor's PQAPP.

The Contractor shall provide EPA with monthly reports of QA activities performed during implementation of this work assignment. These monthly QA reports shall identify QA activities performed to support implementation of this work assignment, problems encountered, deviations from the QAPP, and corrective actions taken. If desired, the Contractor may include this as a part of the contract-required monthly financial/technical progress report.

2.4 Data Quality Act/Information Quality Guidelines Requirements

The Data Quality Act (known as the Information Quality Act) requires EPA to ensure that influential information disseminated by the Agency is sufficiently transparent in terms of data and methods of analysis the information is capable of being substantially reproduced. To support compliance with these data transparency/data reproducibility requirements, EPA plans to include QAPPs as part of any rulemaking record documentation to be made available to the public. (This includes PQAPPs and Supplemental QAPPs (SQAPPs).) The Contractor may claim information in QAPPs as confidential; if the Contractor chooses to do so, the Contractor shall submit a sanitized (i.e., public) version and an unsanitized (i.e., confidential) version at the time the QAPP is submitted for approval by EPA. The sanitized version shall be included in the public docket for the applicable rulemaking (or other docket record), and the unsanitized version shall be included in a non-public (i.e., confidential) portion of the docket (or record).

Information contained in the approved QAPP shall be transparent and reproducible and meet the requirements of the Data Quality Act for influential information. EPA's *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity, of Information Disseminated by the Environmental Protection Agency* (EPA/260R-02-008, October 2002), referred to as "EPA's Information Quality Guidelines," describe EPA procedures for meeting Data Quality Act requirements. Section 6.3 of EPA's Information Quality Guidelines indicate that "especially rigorous robustness checks" should be applied in circumstances where quality-related information cannot be disclosed due to confidentiality issues. Where applicable, the Contractor should indicate which results were obtained using the tools (standard operating procedures (SOPs), checklists, and guidelines) the Contractor designates as confidential so the EPA WACOR can easily identify the areas that shall require rigorous robustness checks and document that those checks have been performed. At the discretion of the EPA WACOR, the contractors may be requested to prepare pre-dissemination review checklist as described in Appendix B of the Office of Water Quality Management Plan, April, 2015. If this is required, the EPA WACOR shall notify the Contractor through written technical direction.

Deliverables and schedule under Task 2

Deliverable	Projected Schedule Date
Monthly reports of QA work performed (may be included in the Contractor's monthly progress report)	Monthly throughout the WA period of performance

Task 3 - Prepare Standardized Naming Convention and Version Control Memorandum

The contractor shall adhere to the EPA WACOR approved standardized naming convention and version control (SNCVC) plan that was developed under the Construction and Development WA 0-01 of contract EP-C-07-023 (WA0-01_T1_SNCVC_08.31.07_V1.pdf). The contractor shall use this standardized convention for all deliverables associated with this work assignment. The EPA WACOR may request the contractor through written technical direction to amend the SNCVC memorandum at any point under this WA. The EPA WACOR will review the revised memorandum and then provide the contractor with written notification of approval or edits that need to be made. The contractor shall prepare the edited SNCVC memorandum incorporating the EPA WACOR's comments, if required. After receiving notification of approval the contractor shall use the revised SNCVC.

Deliverables and schedule under Task 3

- 3a. Revised SNCVC memorandum within 3 calendar days of EPA WACOR technical direction.
- 3b. If additional edits are required the memorandum must be updated within 3 calendar days of receipt of comments from the EPA WACOR, at technical direction of EPA WACOR.

Task 4 – Water Quality Modeling Support (Contract PWS B.4. Methodology Development and Technical Review; C.1. Collection/Preparation of Reports)

EPA has invested in the development of a watershed and surface water quality and quantity modeling platform known as HAWQS (Hydrologic and Water Quality System) for rivers and larger streams in the coterminous United States. Similar national modeling platforms do not exist for other surface water types (i.e., Great Lakes, estuaries, coastal waters, and streams and their associated watersheds below the hydrologic unit code-12 (HUC-12) scale). These water body types are addressed by other existing models that may differ in their scope, temporal and spatial scale, surface water parameters modeled, and other attributes.

Under this Task, the contractor shall provide support to EPA in identifying, characterizing and evaluating the capabilities present in other existing models to complement those provided by HAWQS. A primary objective of the task is to identify and prioritize ways to address critical gaps in modeling capacity for national-scale and large regional scale evaluations, including surface water types (e.g., small streams, estuaries, Great lakes, coastal waters), and processes or constituents not addressed in HAWQS.

Under WAs 1-20 and 2-20, the contractor worked with EPA to create a framework refining the scope of the model review, identify readily available information resources (including EPA experts), conduct an initial literature review, summarize information from the literature and other sources in tabular and text form, and draft a preliminary outline for a final summary report. The contractor shall build upon these prior efforts under this WA.

EPA anticipates that this task shall consist of the steps described below. Although work will generally proceed in the sequence described below, EPA anticipates the overall effort will be iterative. For example, the contractor shall work with EPA to define the scope for review under prior WAs. EPA anticipates continued effort under this WA to refine the scope of the review as new information is obtained.

Step 1: Assemble existing information on surface water quality models.

Under WAs 1-20 and 2-20, the contractor collected and summarized information on water quality models from the literature and websites in both textual and tabular formats. The contractor shall refine and augment the information contained in these materials with new information as it becomes available. This new information may arise from discussions with EPA staff experts, discussions with experts outside EPA, or through additional literature and website review. EPA anticipates that additional literature search needs will be identified as an outcome of discussions with EPA and non-EPA experts (see Steps 2 and 3). EPA will provide guidance on the scope of additional information review and summarization under this task through written technical direction. The contractor shall submit the summary materials to the EPA WACOR for review and comment. The contractor shall revise the materials in response to EPA comments.

Step 2: Discussions with EPA staff experts.

EPA will hold discussions with EPA staff experts with the following goals:

- identify modeling resources available within EPA;
- solicit feedback on the initial written summary of information on water quality models;
- answer questions about the nature and utility of certain models;
- solicit suggestions of other potentially useful resources for the effort (e.g., additional models, literature, modeling experts).

Based on written technical direction from the EPA WACOR, the contractor shall assist the EPA WACOR with the development of a list of EPA staff to contact, and discussion questions. The contractor shall participate in the conversations between the EPA WACOR and EPA staff experts via telephone. The contractor shall keep detailed notes of the conversations and provide a summary (including any action items) to the EPA WACOR. EPA anticipates holding discussions with up to 25 experts.

Step 3: Discussions with non-EPA water quality modeling experts.

EPA will hold discussions with non-EPA water quality modeling experts with the following goals:

- solicit feedback on the initial written summary of information on water quality models;

- answer questions about the nature and utility of certain models;
- solicit suggestions of other potentially useful resources for the effort (e.g., additional models, literature, modeling experts).

Based on written technical direction from the EPA WACOR, the contractor shall assist the EPA WACOR with developing a list of potential non-EPA experts to contact. The contractor shall assist the EPA WACOR with the development of discussion questions and shall participate in conversations between the EPA WACOR and non-EPA experts via telephone. The contractor shall keep detailed notes of the conversations and provide a summary (including any action items) to the EPA WACOR. EPA anticipates holding discussions with up to 25 experts.

Step 4: Create written report summarizing findings.

Based on technical direction from the EPA WACOR, the contractor shall assist the EPA WACOR in developing a written report addressing models and resources available for supporting the OW surface water quality modeling needs at the national and large regional scale. The contractor shall summarize information obtained in prior steps under this Task in the report. The report shall provide background information on the OW's modeling needs, describe the methods used to obtain information, identify and describe available resources, identify important gaps, and suggest potential actions to address those gaps. EPA anticipates that this report will be approximately 40 pages in length (not including appendices). The contractor shall submit the summary report to the EPA WACOR for review and comment. The contractor shall revise the report in response to EPA comments.

Deliverables and schedule under Task 4

- 4a. Written summary of existing information (Step 1) – within 30 calendar days of receipt of written technical direction from EPA WACOR.
- 4b. Revised Preliminary Model Information Collection Framework (Step 1) – within 14 calendar days of receipt of comments from EPA WACOR.
- 4c. Notes from Phone Conversations with EPA Staff Experts (Step 2) – within 14 calendar days of each conversation.
- 4d. Revised Notes from Phone Conversations with EPA Staff Experts (Step 2) – within 10 calendar days of receipt of comments from EPA WACOR.
- 4e. Notes from Phone Conversations with Non-EPA Experts (Step 3) – within 14 calendar days of each conversation.
- 4f. Revised Notes from Phone Conversations with Non-EPA Experts (Step 3) – within 10 calendar days of receipt of comments from EPA WACOR.
- 4g. Summary Findings Report (Step 4) – within 45 calendar days of receipt of technical direction from EPA WACOR.
- 4h. Revised Summary Findings Report (Step 4) – within 30 calendar days of receipt of comments from EPA WACOR.

Task 5 – Housing Transaction and Hedonic Meta-Data (Contract PWS A.2.2. Benefit Analysis; C.1. Collection/Preparation of Reports)

Subtask 5.1 - Acquisition, Preparation, and Summarization of Housing Transaction Data

EPA may need to request assistance from the contractor for amendment or interpretation of data sets submitted to EPA under Task 7 of WA 2-20 as EPA finalizes analyses of these data sets (i.e., Florida, Ohio, New York, Washington). EPA will specify the nature of this assistance through written technical direction, if needed.

Deliverables and schedule under Subtask 5.1:

5.1a. Consultation meeting(s)

5.1b. Revised database for any study location—within 15 days of receipt of written technical direction from EPA WACOR for deliverable 5.1b.

Subtask 5.2 - Hedonic Meta-dataset

Under Task 6 of WA 3-35, Abt Associates prepared an initial draft of a “mini” or pilot meta-dataset of hedonic property value studies of surface water quality and a preliminary partial draft of the full meta-dataset. Based on written technical direction from the EPA WACOR, the contractor shall finish the hedonic property value meta-dataset. EPA anticipates that work under this Subtask could entail:

- (i) Revision of existing memos and/or drafting of additional technical memos;
- (ii) Conducting additional review of the literature to identify any recent or missing hedonic property value studies to update the meta-dataset; and
- (iii) Finalizing coding and data entry of the meta-dataset. This includes revising the data documentation excel sheet, as needed.

Deliverables and schedule under Subtask 5.2:

5.2a. Revised technical memo - within 14 calendar days of receipt of comments from EPA WACOR on deliverable 5.2a.

5.2b. Revised hedonic property value meta-analytic dataset, including all data processing programming code and data documentation - within 30 calendar days of receiving written technical direction from EPA WACOR.

Task 6 – Develop, Test, Validate, or Revise Water Quality Indices (WQIs), Water Quality Ladders (WQLs), or Other Potential Approaches for Linking Water Quality Measures to Economic Models

The EPA anticipates one or more potential studies for linking water quality measures to economic models. These studies are intended to test, validate, and/or revise WQIs, WQLs or other linkages (e.g., clarity) to better support benefits analyses and the national water quality benefits platform. To perform these analyses, EPA will need support for reviewing, testing, validating, and developing linking approaches.

Currently, there is no work or deliverables for the contractor to prepare under Task 6. The EPA plans to use Subtask 7.4 to start any work related to Task 6. The EPA WACOR anticipates amending the WA during the option period to add work and deliverables for Task 6 depending on the memorandum written under Subtask 7.4.

Task 7– Planning for National Water Quality Benefits Platform

Under previous work assignments, WA 3-20 and 3-35, the contractor worked with EPA on developing a software platform to facilitate and enhance the estimation of the benefits of surface water quality improvement. Task 7 addresses the planning of future changes and updates to the platform. Specifically, the contractor shall undertake the following activities:

Sub-task 7.1. Human Health Benefits Road Map

The EPA intends to develop a long-term plan for improving its ability to estimate the human health benefits of water regulations and policies. Under the previous WA 3-35, the contractor produced a memorandum identifying carcinogens that could be incorporated into the NWQB platform health module. To further aid in this effort, the contractor shall expand upon this earlier effort and produce a health benefits road map report (10-20 pages) that provides EPA with recommendations on how to most effectively expand the ability platform to analyze water related human health benefits. The report should identify a candidate list of stressors (e.g., carcinogens, toxins, pathogens) and recommendations for prioritizing the stressors, based on four criteria:

- what is known regarding their potential harm,
- the extent of public exposure,
- the ability to reliably estimate cause and effect relationships, and
- the likely resource requirements for incorporation into the platform based on the human health module work performed under WA 3-35.

The report should identify information sources for:

- Dose-Response functions that provide a numerical relationship between stressor exposure and specific health effects. Whenever possible accounting for both acute and chronic health effects.
- Sub-populations with higher exposure risks (e.g., subsistence fishers) and what are the ways that the frequency, timing, and levels of contact with a stressor can be estimated.

- Exposure pathways such as fish tissue, drinking water, and contact recreation.
- Characterizations of the time profile of changes in exposures and risks, such as cessation lags and latency periods.
- Health outcomes in terms of morbidity versus mortality and length of illness.
- Health risks that may disproportionately affect children.

Deliverables and schedule under Subtask 7.1:

7.1a Draft Human Health Benefits Road Map Report delivered to EPA within 40 days of receiving technical direction from EPA WACOR.

7.1b Revised plan delivered to EPA within 15 days of receiving technical direction from EPA WACOR.

Sub-task 7.2. Memorandum on Adding Geographic Information System (GIS) Functionality to the National Water Quality Benefits Platform

The current version of the platform does not have GIS capabilities, although it does allow for the export of static map image files. The EPA is interested in examining how the addition of GIS features can enhance the overall functionality of the platform. The EPA is also interested in knowing how readily the GIS features of Environmental Benefits Mapping and Analysis Program (BenMap), COBRA®, and Risk-Screening Environmental Indicators (RSEI) could be incorporated into the platform. Other considerations shall include open source GIS and interoperability with EPA's existing GIS tools (e.g., EnviroAtlas, Estuary Datamapper). The contractor shall produce a memorandum (7-15 pages) summarizing options for adding GIS functionality to the tool (i.e., provide input data, select analytic area or subset of waters, display results and etc.) and provide estimates for the resources required to implement each option.

The memorandum shall address how users could import GIS layers for land use and demographic data. Currently the platform contains land use or demographic data in a rasterized (grid) format. However, there is no ability for users to incorporate additional data not currently contained in the platform. An example of the type of data a user might want to incorporate is a file displaying the spatial distribution of subsistence fishing rates for a given state. Ideally there would be a way to convert vector-based data to grid data within the platform, or at a minimum a set of requirements that users could follow to pre-process the data and then import. The memorandum shall address how GIS features could be used to facilitate the development of analytical scenarios directly within the platform through the modification of market or commodity boundaries. An example of this type of functionality is a GIS component that allows users to select a subset of waters to be analyzed based on pre-established boundaries, such as watersheds or state borders. The memorandum shall address the exporting of analytical outputs in both grid and vector based file formats.

Deliverables and schedule under Subtask 7.2:

7.2a Draft Memorandum on Adding GIS Functionality to the National Water Quality Benefits Platform delivered to EPA within 40 days of receiving technical direction from EPA WACOR.

7.2b Revised plan delivered to EPA within 15 days of receiving technical direction from EPA WACOR.

Sub-task 7.3. Plan for Web-based National Water Quality Benefits Platform

The current platform is a desk-top application that is limited to users within EPA. The EPA would like to make a web-based version of the platform publicly available. The contractor shall produce a plan (8-16 pages) describing the steps necessary to create a web-based version of the platform. These steps shall include both development and hosting requirements, and shall layout different options for the EPA WACOR to consider. The plan shall address how it will comply with the Federal Information Technology Acquisition Reform Act (FITARA). Similarly, the plan shall clearly layout what the requirements from the EPA Office of Environmental Information's System Life Cycle Management (SLCM) Policy are pertinent to creating a web-based version of the platform, and the steps that would be taken to meet those requirements.

The plan shall cover staging and testing working software on the public web for use by a subset of the target audience (e.g., academics and employees of state agencies); as well as the process that will be used to implement changes based on user behavior and feedback. The contractor shall detail all anticipated security, performance, and policy requirements that the web-based platform will need to meet, including a continuous and final Authority to Operate (ATO). The contractor shall describe how web-site analytics and user feedback will be used to inform future platform improvements.

Deliverables and schedule under Subtask 7.3:

7.3a Draft Plan for Web-based National Water Quality Benefits Platform delivered to EPA within 40 days of receiving technical direction from EPA WACOR.

7.3b Revised plan delivered to EPA within 15 days of receiving technical direction from EPA WACOR.

Sub-task 7.4. Additional Memorandums

As requested through technical direction from EPA, the contractor shall develop additional memos, briefing materials, planning documents, and/or other summary materials in order to provide information and options for EPA staff on issues relevant to future platform development. Development of these materials could require review and collection of existing literature and data sets. At this time, EPA anticipates requesting up to 3 additional documents.

Deliverables and schedule under Subtask 7.4:

7.4a Draft memorandums, briefing materials, planning documents, or other summary materials, each document delivered to EPA within 20 days of receiving technical direction from EPA WACOR.

7.4b Revised memorandums, briefing materials, planning documents, or other summary materials, each document delivered to EPA within 10 days of receiving technical direction from EPA WACOR.

Task 8 – National Water Quality Benefits Platform Development

Under this task, the contractor shall make additions to the functional and analytical capabilities of the current National Water Quality Benefits Platform (NWQB). The specific platform elements to be addressed by the contractor under this new task are provided in the three subtasks below.

For each deliverable described below, the contractor shall deliver an executable file that runs on the Windows operating system. For new input files, the contractor shall deliver the data inputs or provide a way of downloading this data from the internet using the NWQB interface. The contractor shall document the platform code with annotations and comments to facilitate eventual review. The contractor shall deliver a brief set of instructions (1-2 pages) for using the platform features.

So that the EPA WACOR and platform sub-group can sufficiently assess progress and provide feedback during the development process, the contractor shall deliver up to 4 demonstrations, using Adobe Connect. Each demonstration shall take approximately 30 minutes and focus on the module and how it fits within the larger platform. The EPA WACOR and contractor shall discuss the schedule for the demonstrations, and the specific dates and times for each demonstration will be provided to the contractor by the EPA WACOR through written technical direction.

Sub-task 8.1. Human Health Improvements

Human health improvements from environmental policies include effects such as reduced mortality rates, decreased incidence of non-fatal cancers, chronic conditions and other illnesses, and reduced adverse reproductive or developmental effects. Under the previous WA 3-35, the contractor revised the platform's recreational fishing module to include the human health benefits from: reducing the exposure of infants to mercury while in utero, reducing the effects on child IQ levels from exposure to lead, and reducing incidence of cancer due to arsenic. EPA is currently conducting a peer review of the methods used for estimating the relationship between lead exposure and the occurrence of low birth weight in infants, Attention Deficit and Hyperactivity Disorder in children, and cardio vascular disease in adults. The EPA WACOR anticipates that this peer review will be completed in October 2017. For this WA, after completion of the peer review, the EPA WACOR shall provide the contractor with technical direction to add the human health benefits from reduced adult lead exposure to the Recreational Fishing Human Health Module.

The contractor shall perform a preliminary assessment of the time and resource requirements necessary for developing a Source Water Protection Module that could be used to estimate the avoided treatment costs and human health benefits from reductions in pollutants (e.g., carcinogens, toxins, pathogens, nutrients) upstream of drinking water intakes. EPA identified 23 cost function analyses, or related approaches, linking source water quality to drinking water

treatment costs (Price and Heberling 2017). From those 23 studies, 76 water quality elasticities were extracted. Most elasticities are based on land use proxies for water quality (e.g., forested vs. non-forested); turbidity; nutrient and sediment loads; TOC; and nitrates. Similar to the Recreational Fishing Human Health Module, the Source Water Protection Module would likely need to be updated for each new pollutant that could be considered for benefit estimates. The assessment shall consider whether the module would operate with HAWQS results or outside of HAWQS, and how the input for elasticities might be generated. The EPA WACOR anticipates that the universe of drinking water treatment facilities and much of the relevant cost and benefit information can be drawn from the technical analyses developed for EPA Safe Drinking Water Regulations. For this preliminary assessment, the contractors shall assume that the first pollutant for consideration with the new module will be bromine.

Deliverables and schedule under Subtask 8.1:

8.1a The contractor shall deliver at least one demonstration of the revised recreational fishing cancer risk analysis module using Adobe Connect. The timing for this shall be provided through written technical direction from the EPA WACOR.

8.1b The contractor shall deliver updated version of the NWQB platform with revised Recreational Fishing Human Health Module that now includes the benefits of reduced lead exposure for adults, within 30 days of receiving technical direction from the EPA WACOR. The deliverable shall include an executable file, data sets, annotated code, and instructions for using the new features.

8.1c Requirements assessment for developing a Source Water Protection Module for NWQB platform delivered to EPA within 30 days of receiving technical direction from EPA WACOR.

Sub-task 8.2. Waters of Concern

In the first version of the NWQB the waters of concern that could be used for analyses were limited to freshwaters covered by the National Hydrography medium resolution dataset (NHDmed). Under the previous WA 3-35, the contractor incorporated data layers for NHD high resolution data and for non-linear freshwater features: lakes, reservoirs, ponds, wetlands. The contractors also added the ability to use surface area measures of the water resources of concern. For WA 4-35, the contractor shall incorporate the Chesapeake Bay as a water that can be included for analysis. This effort shall provide a means to develop a more generalizable approach for incorporating large/iconic water bodies. The contractors shall rely on the benefits analysis conducted for the Chesapeake Bay Total Maximum Daily Load (TMDL) as guidance for how to estimate household willingness to pay (WTP) and determine market areas. The contractor will not be responsible for identifying specific water quality models that can be linked to these non-linear features.

Deliverables and schedule under Subtask 8.2:

8.2a The contractor shall deliver at least one demonstration of the increased capabilities for analyzing additional waters of concern using Adobe Connect, the timing for this shall be provided through written technical direction from the EPA WACOR.

8.2b The contractor shall deliver updated version of the NWQB platform with the capabilities for analyzing additional waters of concern by October 27, 2017. The deliverable shall include an executable file, data sets, annotated code, and instructions for using the new features.

Sub-task 8.3. Hedonic Property Values

Currently the platform cannot be used to analyze the effects on property values from improvements to the quality of nearby waters. Although the benefit-transfer procedures are similar, the population of interest is different. To date, the Platform applies WTP values to all households within some pre-specified distance of a waterbody being improved. When transferring hedonic property value results, however, the estimated changes in price (i.e., elasticities or semi-elasticities) apply to houses within some other pre-specified, and much more local, distance. Based on the current literature, EPA will assume a 500-meter distance for any changes in residential property values resulting from a change in water quality. EPA has developed a detailed framework for compiling and formatting the necessary data to estimate the number of potentially impacted homes surrounding individual waterbodies. These efforts will utilize several publically available and spatially explicit datasets, including data from the US Census Bureau, US Geological Survey's (USGS) National Land Cover Dataset, and EPA's National Hydrography Dataset (NHD).

Following EPA's proposed framework, the contractor shall develop a draft hedonic property value module that could form the basis for a future fully functioning module. The draft module shall focus on changes to a measurable water quality attribute (or attributes), such as clarity. EPA envisions that this framework would eventually result in an interface that allows for evaluation of housing value changes due to surface water quality improvements at a national and regional scale, and occurring at different subsets of waterbodies. The valuation component will, at least initially, utilize one or several unit value estimates of the elasticity (or semi-elasticity) of house prices with respect to water quality. These estimates will be based on a parallel meta-analysis of hedonic property value studies, but for purposes of the draft module, an agreed upon elasticity estimate can be used as an initial placeholder. Determining the market and commodity areas will be an important part of developing this proof of concept module, as they will require using demographic data at a more refined scale than what is currently used.

Although beyond the scope of the initial draft module, the proposed framework will eventually rely on the parallel meta-analysis results to estimate and perform limited function and/or unit

value transfers, depending on the available primary studies. To aid the contractor in developing the initial draft hedonic module, EPA is including the following description of how this final hedonic property value module is expected to function.

The appropriate values for applying to the set of potentially impacted houses will be determined by up to three of the following user-selected criteria:

1. Region of the US (as reflected in *northeast*, *midwest*, *south*, and *west*),
2. Waterbody type (following the NHD Plus categorization: lake/reservoir, river, small river, and estuary), and
3. Water quality metric (e.g., water clarity, fecal coliform counts, etc.).

In cases where no or few studies fit the combination of the above three criteria, then the future module would return a null value. In cases, where a sufficient number of studies were available, the corresponding meta-analytic estimate of the average elasticity would be applied to the housing population of interest. EPA envisions that two outputs would then be provided – the total change in residential property values among waterfront homes (assumed distance of 0 to 100 meters from the waterbody of interest) and the total change in residential property values among non-waterfront homes (assumed distance of 100 to 500 meters). The former, by itself, would provide a lower bound on the estimated property value impacts, whereas the sum of the two would yield an upper bound.

Deliverables and schedule under Subtask 8.3:

8.3a If not delivered by the end of WA 3-35, the contractor shall develop and deliver a draft “Nationwide Housing Population Dataset”. This deliverable will consist of a data table (e.g., in a Stata or csv format), where each row is a census block group (or corresponding grid cell) in the contiguous US. The variables will include, among other things: FIPs code, socio-demographic characteristics, median housing values, the total number of homes, and other variables allowing EPA to infer the number of homes within 0 to 100 meters and 100 to 500 meters of the relevant waters. A companion memorandum shall also be provided to document the development of this dataset, data sources, and a definition of all relevant variables. The timing and further guidelines for this deliverable shall be provided through written technical direction.

8.3b The contractor shall deliver at least one demonstration of the draft hedonic property value module using Adobe Connect, the timing for this shall be provided through written technical direction from the EPA WACOR.

8.3c The contractor shall deliver an updated version of the NWQB platform with the proof of concept hedonic property value module by October 20, 2017. The deliverable shall include an executable file, data sets, and instructions for using the new features.

Sub-task 8.4. Wetlands Valuation Module

Currently the NWQB platform cannot be used to estimate household WTP for a change in the ecosystem services provided by wetlands. A review of wetlands valuation studies was performed for the Clean Water Rule (USEPA, 2015). These wetland valuation studies typically estimate household WTP for changes in wetland quantity, while accounting for other relevant factors such as the type of wetlands, potential uses, and proximity to households. The current version of the platform estimates WTP values based on improvements in the measurable quality for waterbodies that are within a pre-specified distance from a set of households (e.g., census block group), rather than a change in quantity. The contractor shall expand upon the literature review performed for the Clean Water Rule to include valuation studies for previously excluded wetland types (e.g., salt marsh). The contractor shall try to supplement study data for any geographic or demographic factors (e.g., household density, population the survey respondents represent, distance between households and waters, etc) that may not be reported in a study, but that could affect WTP. The contractor shall deliver a summary of the revised literature review, which includes a description of the study dataset and steps taken to supplement it to the EPA WACOR.

The contractor shall use this revised set of study data to develop a meta-regression model (MRM) that estimates household WTP for changes in wetland quantity. This effort should begin with an assessment of an earlier meta-analysis of wetland studies (Moeltner and Woodward, 2009), to see if the methodology used for the study could be adapted to produce a MRM that can be used to derive valuation estimates for changes to all or at least a subset of the wetland types contained in the National Wetlands Inventory (NWI). The contractor shall prepare a plan for developing the MRM to be delivered to the EPA WACOR. The plan shall detail how model performance will be evaluated and how the model could be used for a benefits transfer application. After the reviewing the plan, the EPA WACOR shall provide the contractor with technical direction to begin development of the MRM that will form the basis of a Wetlands Valuation Module for the NWQB platform. Once the wetlands valuation MRM is completed the contractor shall perform a case study to demonstrate how the MRM in conjunction with NWI data can be used to provide a valuation estimate for changes in wetland acreage. The contractor shall deliver a report that documents the MRM development and the results of the case study.

Deliverables and schedule under Subtask 8.4:

8.4a The contractor shall deliver a summary of the revised literature review and study dataset description to the EPA WACOR within 30 days of receiving written technical direction from the EPA WACOR.

8.4b The contractor shall deliver a plan for developing the wetlands valuation MRM to the EPA WACOR within 30 days of receiving written technical direction from the EPA WACOR.

8.4c The contractor shall deliver a report that documents the MRM development and the results of the case study within 30 days of receiving written technical direction from the EPA WACOR.

8.4d The contractor shall deliver at least one demonstration of the Wetlands Valuation Module using Adobe Connect, the timing for this shall be provided through written technical direction from the EPA WACOR.

8.4e The contractor shall deliver updated version of the NWQB platform with the capability to generate valuation estimate for changes in wetland acreage by November 17, 2017. The deliverable shall include an executable file, data sets, and instructions for using the new features.

Sub-task 8.5. Quality Assurance Testing and Documentation

After the EPA WACOR has reviewed and determined that the elements from the three subtasks above have been sufficiently incorporated into the platform, the WACOR will provide the contractor with technical direction to finalize this next version of the platform. To finalize the new version, the contractor shall conduct a thorough review of the platform code and deliver a report identifying any issues found and what changes to the code or data sets were made to address them. Before beginning the review, the contractor shall update the earlier testing and code review plan, and submit the revised plan (1-2 pages) to the WACOR. Throughout the platform development process the contractor shall document the code with annotations and comments to facilitate eventual review. As final deliverable for this task, the contractor shall deliver the annotated platform code, as well as an updated User's Manual. The contractor shall also revise the technical documentation for the platform so that it provides sufficient explanations and references for all new analytical capabilities added.

Deliverables and schedule under Subtask 8.5:

8.5a The contractor shall deliver a testing and code review plan within two weeks of receiving technical direction from the WACOR.

8.5b The contractor shall deliver a code review report within two weeks of receiving technical direction from the WACOR, or another deadline specified by the WACOR through technical direction.

The contractor shall deliver the final executable file, technical documentation, data sets, annotated code, and user's manual for the new version of the platform, within 4 weeks of delivering the code review report unless the delivery date is extended by the WACOR through technical direction.

REFERENCES

Moeltner, K. and Woodward, R., 2009. Meta-functional benefit transfer for wetland valuation: making the most of small samples. *Environmental and Resource Economics*, 42(1), pp.89-108.

Price, J. and Heberling, M., 2017. The effects of source water quality on drinking water treatment costs: A review and synthesis of empirical literature. Working paper. EPA, ORD, NRMRL, Cincinnati, OH.

Appendix

Checklist for Projects Utilizing Existing Data

The items noted in this checklist are adapted from those elements found in *EPA Requirements for QA Project Plans (QA/R-5)* (EPA, 2001a), but tailored to the use of existing data.

Table A1. QAPP Elements Applicable to WA 4-35 Linking Water Quality Models to Economic Models, EP-C-13-039, Project that relies on Existing Data (Tasks 4, 5, 6, 7, and 8)

QAPP Element	Sufficiently Addressed in PQAPP	Address in SQAPP	Not Applicable to Project	Explanatory Comments
A1. Title & Approval Sheet				
Project title	X			WA 4-35 Linking Water Quality Models to Economic Models
Organization's name	X			Abt Associates
Effective date and/or version identifier	X			Section ii of PQAPP
Dated signature of Organization's project manager	X			Section ii of PQAPP
Dated signature of Organization's QA manager	X			Section ii of PQAPP
Other signatures, as needed (e.g., STD Project Officer, STD QA Coordinator)	X			Section ii of PQAPP
Revision History			X	
A2. Table of Contents				
Includes sections, figures, tables, references, and appendices	X			Section ii of PQAPP
Document control information indicated (when required by the EPA Project Manager and QA Manager)	X			Section ii of PQAPP
A3. Distribution List				
Includes all individuals who are to implement or otherwise receive the QAPP and identifies their organization	X			Section 2.1 of PQAPP; pages 5-7
A4. Project/Task Organization				
Identifies key individuals with their responsibilities (e.g., data users, decision makers, project QA manager, Subcontractors, etc.) and contact info.	X			Reference PQAPP section 2.1 on page 5. Referencing table 2.1 and descriptions on page 7 of PQAPP. Specific people identified for the following roles: PQA: Abt WAM: OST WACOR: Matt Heberling
Organization chart shows lines of authority & reporting responsibilities	X			Reference PQAPP section 2.1 for overall picture
Project QA manager position indicates independence from unit collecting/using data	X			Reference PQAPP section 2.1 on page 5.

QAPP Element	Sufficiently Addressed in PQAPP	Address in SQAPP	Not Applicable to Project	Explanatory Comments
A5. Problem Definition/Background				
Clearly states problem to be resolved, decision to be made, or hypothesis to be tested	X			PQAPP Section 2.2 – goal of program is to conduct economic analyses for ELGs See PQAPP table 2-2: cost-benefit and economic impact analysis, industry profiles, collection /preparation of reports, review and analysis of public comments, legislative and litigation support, database development and management,. see WA
Identifies project objectives or goals	X			Reference PQAPP Table 2.2 ; see WA
Historical & background information				
Cites applicable technical, regulatory, or program-specific quality standards, criteria, or objectives	X			Section 2.2 – goal of program is to conduct economic analyses for ELGs. See table 2-2 and above reference for specific analyses
A6. Project/Task Description				
List measurements to be made/data to obtain	X			See bulleted list in section 2.3 of PQAPP
Notes special personnel or equipment requirements			X	
Provides work schedule			X	No set dates, addressed in work plan, not necessary for QAPP.
A7. Overall Quality Objectives & Criteria				
States overall quality objectives and limits needed to support the project goals and objectives cited in A5	X			Section 2.4 of PQAPP (starting page 16). See WA.
A8. Special Training Requirements/ Certifications				
Identifies specialized skills, training or certification requirements	X			section 2.5 of PQAPP, sufficient
Discusses how this training will be provided/the necessary skills will be assured and documented	X			section 2.5 of PQAPP, sufficient
A9. Project-level Documents & Records				
Describes process for distributing the approved QAPP and other planning documents (and updates) to staff	X			Section 2 of PQAPP, pages 5-7
Identifies final work products that will result from the project				Section 2.6 of PQAPP
Describes the process for developing, reviewing, approving, and disseminating the final work products and individuals responsible for these processes	X			See Appendix A of PQAPP
B1. Data Needs				
Detailed list/description of the specific data elements needed to support project goals	X			See Table 3-1 of PQAPP headings: Company Financial Data,, & Other Industry Data, & valuation and Economic Impact: including specifically:, US Census Bureau, EIA, RMS

QAPP Element	Sufficiently Addressed in PQAPP	Address in SQAPP	Not Applicable to Project	Explanatory Comments
Description of the scope of the data elements that you need (e.g., data supporting specific treatment options vs. the full range of options, data supporting the entire country vs. a specific geographic region)				See Table 3-1 of PQAPP headings: Company Financial Data, & Other Industry Data, & valuation and Economic Impact: including specifically, US Census Bureau, EIA, RMS
If project includes development or update of a project database, QAPP identifies and defines each database field	X			
B2. Potential Data Sources				
Identifies and describes potential sources of the existing data needed (e.g., photographs, topographical maps, facility or state files, census data, meteorological data, publications, etc.) and the rationale for their use	X			Section 3.1.2 of PQAPP
If literature searches are used, describes the search engines that will be used and key search terms	X			Section 3.1.2 of PQAPP
If databases or models will be used, describe the database (or model) in terms of who developed it and operates it and the type of data it contains	X			See section 3 of PQAPP
For other potential sources, describe the potential sources & rationale for considering or using each one	X			Section 3.1.2 of PQAPP
B3. Criteria for Selecting Data Sources				
Identifies each criterion that will be used to determine if the candidate data sources listed in B2 will meet your needs, and how each criterion is defined. (Criteria vary by project; examples include reliability, age, applicability, quantity, format, and others)	X			PQAPP 3.1.3 Criteria for Selecting Data Sources; data sets (page 45)
Explains rating system used to evaluate source against each criterion	X			PQAPP section 3.1.4, page 48
B4. Data Value Selection Approach				
For data sources that meet the criteria identified in B3: Describes the criteria and procedures that will be used to determine which value(s) identified in the acceptable sources are most appropriate for use in the project	X			Section 3.1.4
For data that do not meet these pre-established criteria but are the only data available, explains how the decision to use such data will be made and documented			X	
B5. Resolving Data Gaps				
Describes the process for identifying and addressing data gaps that still exist after candidate data sources have been evaluated and appropriate data values have been identified	X			Section 3.1.5 of PQAPP

QAPP Element	Sufficiently Addressed in PQAPP	Address in SQAPP	Not Applicable to Project	Explanatory Comments
Describes the process that will be used to address any new data needs revealed during the data gathering process (i.e., additional data elements not previously considered)			X	
B6. Data Gathering Documentation and Records				
Describes how results of the source selection and the data value selection will be documented, including any sources or values that were rejected and the rationale for not using them	X			PQAPP section 3.1.6 Data Gathering Document and Records, page 49. See section 4.1.1
For data that are deemed acceptable and that will be used, explains how each data element will be associated to its original source citation (i.e., bibliographic information, telephone contact reports, email messages, etc.)	X			PQAPP section 3.1.6 Data Gathering Document and Records, page 49
C1. Standardization of Data Elements				
Describes the process to ensure that units and other key measures are captured and standardized (or otherwise made comparable) in the database	X			PQAPP 3.2.1
If the project requires that all fields be standardized to a single set of units (e.g., US dollars for economic data, µg/L for chemical data), identifies the standard units that will be required for each data element	X			PQAPP 3.2.1
Identifies the procedures for converting data reported in other units to the standardized units, including any rounding or truncating procedures, and procedures for ensuring these conversions are performed correctly	X			PQAPP 3.2.1
If standardization of data elements is not needed, explains the process for ensuring that data presented in varying units are comparable enough for use in the project and that project staff members and other data users will be able to readily identify differences in units	X			PQAPP 3.2.1
C2. Data Entry				
Explains the process for manually entering selected data into the project database, who will be responsible for such data entry, and the QC strategies that will be used to ensure the database accurately and completely captures the data as presented in the original source	X			PQAPP section 3.2.2

QAPP Element	Sufficiently Addressed in PQAPP	Address in SQAPP	Not Applicable to Project	Explanatory Comments
C3. Merging or Uploading Electronic Data from Existing Sources				
If data are available electronically and will be uploaded or merged into the project database: describes the procedures that will be followed to ensure that errors are not introduced during the upload/merge process and the final database reflects the original dataset(s)	X			PQAPP section 3.2.3
C4. Data Review				
Describes the process for ensuring the data have been recorded, transmitted, and processed correctly	X			PQAPP section 3.2.4
C5. Data Storage and Manipulation				
Describes how the existing data will be stored	X			PQAPP section 3.2.5
Describes who will be responsible for access to and maintenance of the stored data	X			PQAPP section 3.2.5
Describes how the existing data will be incorporated with other project data to support the project goal/decision to be made	X			PQAPP section 3.2.5
Describes the QC strategies that will be employed to ensure the integrity of the data is not compromised during data storage, access/retrieval, updates, or other manipulation	X			PQAPP section 3.2.5
D1. Data Quality Verification and Data Quality Reporting				
Describes the process for verifying the final set of data meets the overall criteria originally specified for the project	X			PQAPP Section 3.3.1
Describes how these determinations will be documented and reported	X			PQAPP Section 3.3.1
For data that don't meet the pre-established specifications, explains the process for determining if they are usable and how such decisions will be documented	X			PQAPP Section 3.3.1
D2. Use/Analysis of the Existing Data				
Provides details regarding the exact means in which the data will be used to meet project objectives	X			PQAPP 3.2.2
Includes an explanation or list of the information to be calculated and the data elements that will be used to make those calculations	X			PQAPP 3.2.2
Includes applicable calculations and equations (if known) or explanations of how they will be developed	X			PQAPP 3.2.2
Includes plans for excluding outliers	X			PQAPP 3.2.2

QAPP Element	Sufficiently Addressed in PQAPP	Address in SQAPP	Not Applicable to Project	Explanatory Comments
D3. Methodology Documentation and Conceptual Review				
If exact methodologies for analyzing the data will need to be developed or modified during the course of data analysis, explains the process by which such methodologies will be documented, who is responsible for reviewing/ approving their use, and how the methodologies will be checked to ensure they yield the desired products	X			PQAPP 3.2.3
D4. Technical Review of the Data Analysis				
Describes activities that will be used to ensure the data analyses are being implemented as specified and will support project objectives	X			PQAPP 3.3.4
Explains procedures for identifying and notifying appropriate personnel if changes to the originally planned procedures are warranted, and the process for approving, documenting and implementing such changes	X			PQAPP 3.3.4
D5. Final Verification of Data Analysis and Reconciliation with User Requirements				
Describes the process for reviewing the final work product to ensure the work was generated in accordance with the QAPP, and the work product addresses the overall project goals and objectives	X			PQAPP 3.3.5
Describes how the results of this assessment will be documented	X			PQAPP 3.3.5
Describes how any limitations of the data or data analyses that were used to prepare the final work product will be documented and communicated	X			PQAPP 3.3.5

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 4-43				
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:				
Contract Number EP-C-13-039			Contract Period 09/11/2013 To 07/31/2018 Base Option Period Number 4			Title of Work Assignment/SF Site Name Coastal Recreational Surveys				
Contractor ABT ASSOCIATES INC.					Specify Section and paragraph of Contract SOW A.2.2, A.6, C.2					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval						Period of Performance From 08/01/2017 To 07/31/2018				
Comments: Work on this WA not authorized to begin until August 1, 2017.										
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund										
SFO (Max 2) <input type="checkbox"/> Note: To report additional accounting and appropriations data use EPA Form 1900-69A.										
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										
Authorized Work Assignment Ceiling										
Contract Period:		Cost/Fee:				LOE: 0				
09/11/2013 To 07/31/2018										
This Action:						667				
Total:						667				
Work Plan / Cost Estimate Approvals										
Contractor WP Dated:				Cost/Fee		LOE:				
Cumulative Approved:				Cost/Fee		LOE:				
Work Assignment Manager Name Marty Chintala						Branch/Mail Code:				
_____ (Signature) (Date)						Phone Number: 401-782-3155				
						FAX Number:				
Project Officer Name Ahmar Siddiqui						Branch/Mail Code:				
_____ (Signature) (Date)						Phone Number: 202-566-1044				
						FAX Number:				
Other Agency Official Name						Branch/Mail Code:				
_____ (Signature) (Date)						Phone Number:				
						FAX Number:				
Contracting Official Name Noelle Mills						Branch/Mail Code:				
_____ (Signature) (Date)						Phone Number: 513-487-2171				
						FAX Number:				

WORK ASSIGNMENT

Title: Instrument Development for Coastal Recreation Revealed Preference Surveys

Contractor: Abt Associates

Contract No.: EP-C-13-039

Work Assignment Number: 4-43

Estimated Period of Performance: August 1, 2017 through July 31, 2018

Estimated Level of Effort: 667

Key EPA Personnel:

Work Assignment COR (WA COR):

Marty Chintala
NHEERL/ORD/AED/WEB
401-782-3155
401-782-3030 (fax)

Background and Purpose:

The 1972 Clean Water Act (CWA) directs EPA to develop national technology-based regulations for categories of industries that discharge pollutants directly to surface waters (effluent guidelines) or that discharge pollutants indirectly through sewage treatment plants (pretreatment standards). The CWA also directs EPA to develop national technology-based regulations for new industrial facilities (new source performance standards).

Under Executive Orders 12866 and 13563, EPA is required to estimate the potential benefits and costs to society. As such, the purpose of this Work Assignment (WA) is to support EPA's efforts to improve its ability to monetize the benefits associated with these regulatory actions. The WA will include support for developing and implementing a revealed preference survey to estimate participation in and values for water recreation as those values relate to water quality. This will include assistance with programming of the online survey, survey pretesting, and survey implementation. The contractor shall assist staff in EPA's Office of Research and Development in the development and implementation of the revealed preference survey instrument.

Under this work assignment the contractor shall conduct all analyses requiring the collection and manipulation of data and models in accordance with the EPA approved quality assurance (QA) project plan that will be based on Task 2 QAPP language. The QA project plan shall describe the procedures for assuring the quality of the primary and secondary environmental and economic data used for this work assignment.

The focus of this work is on coastal recreation participation and site choice, and effects of water

quality on participation in and values for water recreation, using revealed preference approaches. This will include defining the market extent, or the affected people and activities. While stated preference methods can capture a larger set of values, including both use and non-use values, they may suffer from various types of bias, and often respondents lack context and experience with the good or ecosystem service they are expected to value. Revealed preference methods, on the other hand, require data on choices and choice sets and assumptions of a choice framework, often based on random utility models (RUM) of discrete choices.

Developing a sound revealed preference survey instrument requires survey pretesting. EPA requires assistance to program, pretest, and implement a revealed preference survey. The survey will focus on regional (New England) water-based recreation participation and site choices including water quality in the factors affecting WTP as well as site choice (referred to below as the mixed-mode survey). The data collected will inform a regional demand model for water-based recreation, including marginal value (WTP estimates) as well as aggregate participation modeling for site alternatives. The survey will have two versions: one for general recreation, using a sample of the general public, and one targeted to shellfishers, using a sample of shellfish license holders.

The focus of this work will be values for and participation in water-contact recreation. It will include estimates of site choice, total participation, and values per trip; and how these change with changes in water quality. It may include various types of coastal recreation, including beach use, swimming, shellfishing, small boating, and other activities. The geographic focus of the study is New England, with an added emphasis on Barnstable, County, MA (Cape Cod).

VII. General Requirements of the Work Assignment and Schedule

Confidential Business Information: During the course of the work assignment, the contractor will not be accessing and evaluating CBI.

Budget Reporting: The contractor under this work assignment is required to report to the EPA WACOR and Project Officer (PO) when 80 percent of the total work assignment funding amount has been depleted. The contractor must also report to the EPA WACOR when 80 percent of the approved Workplan budget has been depleted.

Identification as Contracting Staff: To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and prior to the start of any meeting. Contractor personnel are prohibited from acting as the Agency's official representative. When speaking with the public, the contractor should refer all interpretations of policy to the EPA WACOR.

Limitation of Contractor Activities: The contractor will submit drafts of all deliverables to the EPA WACOR for review prior to submission of the final product. These drafts will clearly specify the methods, procedures, considerations, assumptions, relevant citations, data sources

and data that support any conclusions and recommendations. The contractor will incorporate all EPA WACOR comments into all final deliverables, unless otherwise agreed upon by the EPA WACOR. The contractor will adhere to all applicable EPA management control procedures as implemented by the EPA Contracting Officer (CO), EPA Project Officer (PO), and EPA WACOR.

Quick Response: Under this Performance Work Statement the contractor will not be required to provide information for use by EPA for quick responses and analyses of options, issues, and policy decisions. Quick responses are those which require completion in one to five working days.

Travel:

The contractor may be required to travel under this work assignment. Travel may be to participate with EPA in focus groups or other on-site data collection, and to meet with EPA to discuss methodology and other important issues associated with the project. A request for approval for any travel directly chargeable to this work assignment must be submitted and approved by the PO before travel begins.

Deliverable Formatting: All memos, draft comments, summaries and responses, and chapters are to be provided in electronic form using Word and/or Excel/Access, GIS shapefiles, or, in special cases another software program agreed to by EPA. Memos are to be written in a manner which will make them easy to turn into draft chapters for the Final Report. For deliverables that are in Word or pdf versions of Word documents, that are intended to be shared with management or the public, the contractor shall use decimal align in all tables containing columns of numbers of varying digits, whether decimal places are reported or not. All final materials, e.g., memos, chapters, etc. are to be prepared only after receiving written technical direction from the EPA WACOR and will be formatted to be in compliance with the Section 508 Amendment to the Rehabilitation Act of 1973.

VIII. Performance Work Statement

The EPA WACOR will review all deliverables in draft form and provide revisions and/or comments to the contractor. The contractor shall prepare the final deliverables incorporating the EPA WACOR's comments.

Task 1 - Prepare Workplan

The contractor shall prepare a workplan within 15 calendar days of receipt of a work assignment signed by the Contracting Officer. The workplan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, a detailed cost estimate by task and a staffing plan. The WA COR and the PO and the CO will review the workplan. However, only the CO can approve/disapprove, suggest revisions, or change the workplan. Official revisions will be given to the contractor by the Contracting Officer. The contractor shall prepare a revised workplan incorporating the Contracting Officer's comments, if required.

Deliverables and schedule under Task 1

- 1a. Workplan within 15 calendar days of receipt of work assignment.**
- 1b. Revised workplan within 5 calendar days of receipt of comments from the Contracting Officer, if required.**

Task 2 - Quality Assurance

2.1 Background

Quality Assurance Project Plans are required under the Agency's Quality Assurance Policy CIO-2105, formerly EPA Order 5360.1A2 and implementing guidance CIO-2105-P-01-0. All projects that involve the generation, collection, analysis and use of environmental data must have an approved Quality Assurance Project Plan (QAPP) in place prior to the commencement of the work.

Note that QAPPs are required for the development or revision of models and software that support the generation, collection, evaluation, analysis, or use of data. (A model is set of equations and assumptions used to predict unknown data.) When existing models are used as a tool to generate or evaluate data, the project QAPP must describe the model and explain how it will be used and how its output will be evaluated to ensure the modeling effort meets the overall quality objectives for the project. Development or revision of new models also must be supported by a QAPP that describes the objectives for the model, the quality criteria that will be applied to the model, and the procedures for evaluating whether the model meets those criteria.

2.2 QA Project Plan Requirements

The Contractor has previously prepared a contract-wide Programmatic QAPP (PQAPP) for Contract EP-C-13-039. This PQAPP describes, in a single document, information that is not site or time-specific, but applies throughout the program (i.e., the duration of the contract). When tasked with preparing the PQAPP, the Contractor was informed that the PQAPP may need to be supplemented with project-specific details to support individual work assignments that involve the collection, generation, evaluation, analysis, or use of environmental data.

The activities in this work assignment involve gathering, evaluating, analyzing, and otherwise using existing economic data (also known as "secondary" use of data) and collecting primary data using revealed preference surveys and focus groups. For any activities not covered under the existing PQAPP, the Contractor shall prepare a supplemental QAPP (SQAPP).

In support of this work assignment, the Contractor shall ensure that the work plan provides enough detail to clearly describe:

- The type of data to be gathered or used under this work assignment to support the project objectives as well as a rationale for when those sources are appropriate and what data available in each will support the project
- The quality objectives needed to ensure the data will support the project objectives, and
- The QA/QC activities to be performed to ensure that any results obtained are documented and are of the type, quality, transparency, and reproducibility needed.

WORK ASSIGNMENT

Title: Instrument Development for Coastal Recreation Revealed Preference Surveys

Contractor: Abt Associates

Contract No.: EP-C-13-039

Work Assignment Number: 4-43

Estimated Period of Performance: August 1, 2017 through July 31, 2018

Estimated Level of Effort: 667

Key EPA Personnel:

Work Assignment COR (WA COR):

Marty Chintala
NHEERL/ORD/AED/WEB
401-782-3155
401-782-3030 (fax)

Background and Purpose:

The 1972 Clean Water Act (CWA) directs EPA to develop national technology-based regulations for categories of industries that discharge pollutants directly to surface waters (effluent guidelines) or that discharge pollutants indirectly through sewage treatment plants (pretreatment standards). The CWA also directs EPA to develop national technology-based regulations for new industrial facilities (new source performance standards).

Under Executive Orders 12866 and 13563, EPA is required to estimate the potential benefits and costs to society. As such, the purpose of this Work Assignment (WA) is to support EPA's efforts to improve its ability to monetize the benefits associated with these regulatory actions. The WA will include support for developing and implementing a revealed preference survey to estimate participation in and values for water recreation as those values relate to water quality. This will include assistance with programming of the online survey, survey pretesting, and survey implementation. The contractor shall assist staff in EPA's Office of Research and Development in the development and implementation of the revealed preference survey instrument.

Under this work assignment the contractor shall conduct all analyses requiring the collection and manipulation of data and models in accordance with the EPA approved quality assurance (QA) project plan that will be based on Task 2 QAPP language. The QA project plan shall describe the procedures for assuring the quality of the primary and secondary environmental and economic data used for this work assignment.

The focus of this work is on coastal recreation participation and site choice, and effects of water

quality on participation in and values for water recreation, using revealed preference approaches. This will include defining the market extent, or the affected people and activities. While stated preference methods can capture a larger set of values, including both use and non-use values, they may suffer from various types of bias, and often respondents lack context and experience with the good or ecosystem service they are expected to value. Revealed preference methods, on the other hand, require data on choices and choice sets and assumptions of a choice framework, often based on random utility models (RUM) of discrete choices.

Developing a sound revealed preference survey instrument requires survey pretesting. EPA requires assistance to program, pretest, and implement a revealed preference survey. The survey will focus on regional (New England) water-based recreation participation and site choices including water quality in the factors affecting WTP as well as site choice (referred to below as the mixed-mode survey). The data collected will inform a regional demand model for water-based recreation, including marginal value (WTP estimates) as well as aggregate participation modeling for site alternatives. The survey will have two versions: one for general recreation, using a sample of the general public, and one targeted to shellfishers, using a sample of shellfish license holders.

The focus of this work will be values for and participation in water-contact recreation. It will include estimates of site choice, total participation, and values per trip; and how these change with changes in water quality. It may include various types of coastal recreation, including beach use, swimming, shellfishing, small boating, and other activities. The geographic focus of the study is New England, with an added emphasis on Barnstable, County, MA (Cape Cod).

VII. General Requirements of the Work Assignment and Schedule

Confidential Business Information: During the course of the work assignment, the contractor will not be accessing and evaluating CBI.

Budget Reporting: The contractor under this work assignment is required to report to the EPA WACOR and Project Officer (PO) when 80 percent of the total work assignment funding amount has been depleted. The contractor must also report to the EPA WACOR when 80 percent of the approved Workplan budget has been depleted.

Identification as Contracting Staff: To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and prior to the start of any meeting. Contractor personnel are prohibited from acting as the Agency's official representative. When speaking with the public, the contractor should refer all interpretations of policy to the EPA WACOR.

Limitation of Contractor Activities: The contractor will submit drafts of all deliverables to the EPA WACOR for review prior to submission of the final product. These drafts will clearly specify the methods, procedures, considerations, assumptions, relevant citations, data sources

and data that support any conclusions and recommendations. The contractor will incorporate all EPA WACOR comments into all final deliverables, unless otherwise agreed upon by the EPA WACOR. The contractor will adhere to all applicable EPA management control procedures as implemented by the EPA Contracting Officer (CO), EPA Project Officer (PO), and EPA WACOR.

Quick Response: Under this Performance Work Statement the contractor will not be required to provide information for use by EPA for quick responses and analyses of options, issues, and policy decisions. Quick responses are those which require completion in one to five working days.

Travel:

The contractor may be required to travel under this work assignment. Travel may be to participate with EPA in focus groups or other on-site data collection, and to meet with EPA to discuss methodology and other important issues associated with the project. A request for approval for any travel directly chargeable to this work assignment must be submitted and approved by the PO before travel begins.

Deliverable Formatting: All memos, draft comments, summaries and responses, and chapters are to be provided in electronic form using Word and/or Excel/Access, GIS shapefiles, or, in special cases another software program agreed to by EPA. Memos are to be written in a manner which will make them easy to turn into draft chapters for the Final Report. For deliverables that are in Word or pdf versions of Word documents, that are intended to be shared with management or the public, the contractor shall use decimal align in all tables containing columns of numbers of varying digits, whether decimal places are reported or not. All final materials, e.g., memos, chapters, etc. are to be prepared only after receiving written technical direction from the EPA WACOR and will be formatted to be in compliance with the Section 508 Amendment to the Rehabilitation Act of 1973.

VIII. Performance Work Statement

The EPA WACOR will review all deliverables in draft form and provide revisions and/or comments to the contractor. The contractor shall prepare the final deliverables incorporating the EPA WACOR's comments.

Task 1 - Prepare Workplan

The contractor shall prepare a workplan within 15 calendar days of receipt of a work assignment signed by the Contracting Officer. The workplan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, a detailed cost estimate by task and a staffing plan. The WA COR and the PO and the CO will review the workplan. However, only the CO can approve/disapprove, suggest revisions, or change the workplan. Official revisions will be given to the contractor by the Contracting Officer. The contractor shall prepare a revised workplan incorporating the Contracting Officer's comments, if required.

Deliverables and schedule under Task 1

- 1a. Workplan within 15 calendar days of receipt of work assignment.**
- 1b. Revised workplan within 5 calendar days of receipt of comments from the Contracting Officer, if required.**

Task 2 - Quality Assurance

2.1 Background

Quality Assurance Project Plans are required under the Agency's Quality Assurance Policy CIO-2105, formerly EPA Order 5360.1A2 and implementing guidance CIO-2105-P-01-0. All projects that involve the generation, collection, analysis and use of environmental data must have an approved Quality Assurance Project Plan (QAPP) in place prior to the commencement of the work.

Note that QAPPs are required for the development or revision of models and software that support the generation, collection, evaluation, analysis, or use of data. (A model is set of equations and assumptions used to predict unknown data.) When existing models are used as a tool to generate or evaluate data, the project QAPP must describe the model and explain how it will be used and how its output will be evaluated to ensure the modeling effort meets the overall quality objectives for the project. Development or revision of new models also must be supported by a QAPP that describes the objectives for the model, the quality criteria that will be applied to the model, and the procedures for evaluating whether the model meets those criteria.

2.2 QA Project Plan Requirements

The Contractor has previously prepared a contract-wide Programmatic QAPP (PQAPP) for Contract EP-C-13-039. This PQAPP describes, in a single document, information that is not site or time-specific, but applies throughout the program (i.e., the duration of the contract). When tasked with preparing the PQAPP, the Contractor was informed that the PQAPP may need to be supplemented with project-specific details to support individual work assignments that involve the collection, generation, evaluation, analysis, or use of environmental data.

The activities in this work assignment involve gathering, evaluating, analyzing, and otherwise using existing economic data (also known as "secondary" use of data) and collecting primary data using revealed preference surveys and focus groups. For any activities not covered under the existing PQAPP, the Contractor shall prepare a supplemental QAPP (SQAPP).

In support of this work assignment, the Contractor shall ensure that the work plan provides enough detail to clearly describe:

- The type of data to be gathered or used under this work assignment to support the project objectives as well as a rationale for when those sources are appropriate and what data available in each will support the project
- The quality objectives needed to ensure the data will support the project objectives, and
- The QA/QC activities to be performed to ensure that any results obtained are documented and are of the type, quality, transparency, and reproducibility needed.

2.3 Additional QA Documentation Required

The EPA Quality Manual for Environmental Programs (CIO 2105-P-01-0, May 2000) requires published Agency reports containing environmental data to be accompanied by a readily identifiable section or appendix that discusses the quality of the data and any limitations on the use of the data with respect to their originally intended application. The EPA Quality Manual further requires Agency reports to be reviewed by the QA manager (or other authorized official) before publication to ensure that an adequate discussion of QA and QC activities is included. The purpose of the review is to ensure the reports provide enough information to enable a knowledgeable reader to determine if the technical and quality goals were met for the intended use of the data. Reports should include applicable statements regarding the use of any environmental data presented as a caution about possible misuse of the data for other purposes. For example, a Technical Support Document or Study Report must include a clear discussion of the quality management strategies (including the project goals and objectives, quality objectives and criteria, and QA/QC practices) that were employed to control and document the quality of data generated and used. These documents should also discuss any deviations from procedures documented in the EPA-approved QAPP(s) supporting the project, the reasons for those deviations, any impact of those deviations had on data quality, and steps taken to mitigate data quality issues.

In support of this Agency requirement, all major deliverables (e.g., Technical Support Documents, Study Reports, Analytical Methods) produced by the Contractor under this work assignment must include a discussion of the QA/QC activities that were performed to support the deliverable, and this discussion must provide a sufficient level of detail to allow the QA Coordinator (or designee) to determine if the QA/QC strategies implemented for the project sufficiently support the intended use of the data. Upon receipt, the EPA WACOR will review each applicable report and certify whether the Contractor has adhered to the QA requirements documented in the Contractor's PQAPP and SQAPP.

The Contractor also shall provide EPA with monthly reports of QA activities performed during implementation of this work assignment. These monthly QA reports shall identify QA activities performed to support implementation of this work assignment, problems encountered, deviations from the QAPP, and corrective actions taken. If desired, the Contractor may include this as a part of the contract-required monthly financial/technical progress report.

2.4 Data Quality Act/Information Quality Guidelines Requirements

The Data Quality Act (also known as the Information Quality Act) requires EPA to ensure that influential information disseminated by the Agency is sufficiently transparent in terms of data and methods of analysis that the information is capable of being substantially reproduced. To support compliance with these data transparency/ data reproducibility requirements, EPA plans to include QAPPs as part of any rulemaking record documentation to be made available to the public. (This includes PQAPPs and SQAPPs.) The Contractor may claim information in QAPPs as confidential; if the Contractor chooses to do so, the Contractor shall submit a sanitized (i.e., public) version and an unsanitized (i.e., confidential) version at the time the QAPP is submitted for approval by EPA. The sanitized version shall be included in the public docket for the applicable rulemaking (or other docket

record), and the unsanitized version shall be included in a non-public (i.e., confidential) portion of the docket (or record).

Information contained in the approved QAPP shall be transparent and reproducible and meet the requirements of the Data Quality Act for influential information. EPA's *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity, of Information Disseminated by the Environmental Protection Agency* (EPA/260R-02-008, October 2002), referred to as "EPA's Information Quality Guidelines," describe EPA procedures for meeting Data Quality Act requirements. Section 6.3 of EPA's Information Quality Guidelines indicate that "especially rigorous robustness checks" should be applied in circumstances where quality-related information cannot be disclosed due to confidentiality issues. Where applicable, the Contractor should indicate which results were obtained using the tools (SOPs, checklists, and guidelines) that the Contractor designates as confidential so that the EPA WACOR can easily identify the areas that shall require rigorous robustness checks and document that those checks have been performed. At the discretion of the EPA WACOR, the contractors may be requested to prepare pre-dissemination review checklist as described in Appendix B of the Office of Water Quality Management Plan, April, 2015. If this is required, the EPA WACOR shall notify the Contractor through written technical direction.

Acceptable Quality Assurance Documentation must be submitted to the EPA Project Officer within 60 days of the acceptance of this agreement. No work involving direct measurements or data generation, environmental modeling, compilation of data from literature or electronic media, and data supporting the design, construction, and operation of environmental technology shall be initiated under this project until the EPA Project Officer, in concert with the EPA Quality Assurance Manager, has approved the quality assurance documentation (see CFR 30.54 or 31.45 as appropriate).

Deliverables and schedule under Task 2

2a. SQAPP, if necessary, within 60 calendar days of receipt of work assignment.

2b. Monthly reports of QA work performed (may be included in Contractor's monthly progress report), monthly throughout the WA period of performance.

Task 3 - Prepare Standardized Naming Convention and Version Control Memorandum

The contractor shall prepare and submit a memorandum that proposes a standardized naming convention and version control (SNCVC) for all deliverables associated with the WA. This system will ensure that deliverables are clearly named and dated and that the sequence of versions of a document is clear. The EPA WACOR will review the memorandum and then provide the contractor with written notification of approval or edits that need to be made. The contractor shall prepare a revised SNCVC memorandum incorporating the EPA WACOR's comments, if required. After receiving notification of approval the contractor will use this standardized convention for all deliverables associated with the work assignment(s). The EPA WACOR may direct the contractor through written technical direction to amend the SNCVC memorandum at any point during the WA.

Deliverables and schedule under Task 3

3a. SNCVC memorandum within 7 calendar days of workplan approval.

3b. If required, revised memorandum within 3 calendar days of receipt of comments from the EPA WACOR, at technical direction of EPA WACOR.

Task 4 – Assistance with Development of Internet Survey(s) (A.2.2 Benefit Analysis; A.6 Methodology Development and Technical Review)

Subject to OMB approval, ORD plans to conduct a mixed-mode survey (using mail recruitment for an internet survey) of people who participate in coastal recreation within 100 miles of Cape Cod, with a second version sent to shellfish license holders in MA. ORD will provide printing of any survey booklets needed, using U.S. Government printing services. The contractor shall assist with operationalizing the online surveys. For a mixed-mode survey, the contractor shall create the needed online functionality for data collection, including interactive mapping functionality, for two versions of the survey – one for general coastal recreation, and one focused on shellfishing. This functionality should be created so that it can be reused, with modifications, in future applications in other regions.

Deliverables and schedule under Task 4

4a. Create online survey functionality, including interactive mapping, for 2 survey versions. Provide online survey functionality and a tool to the EPA for future applications within 8 weeks of receiving technical direction from WAM.

Task 5 – Assistance Addressing any OMB Comments or Changes to ICR for Mixed-Mode Survey (A.2.2 Benefit Analysis; A.6 Methodology Development and Technical Review; C.2 Review and Analysis of Public Comments)

The contractor will assist in responding to any questions, changes and clarifications from OMB once ORD has submitted the survey ICR. As part of the process, the contractor will assist in conducting a pretest survey, if needed for approval. Implementation of the pretest survey is included in Task 6.

Deliverables and schedule under Task 5

5a. Address follow-up questions and changes to ICR based on OMB review, in consultation with ORD, within 2 weeks of receiving technical direction from WAM.

Task 6 – Conduct Mixed-Mode Survey (A.2.2 Benefit Analysis; A.6 Methodology Development and Technical Review; C.2 Review and Analysis of Public Comments)

Once approval for survey(s) is obtained from OMB, the contractor shall implement the pretest and survey for the mail, or mixed-method survey as designed. This entails mailings/emailings, follow-up mailings/emailings, providing token cash incentives to respondents, and other steps needed to follow the Dillman survey implementation recommendations.

Contingent upon OMB approval, EPA will select a mixed-method approach using mail recruitment for an internet survey. If OMB does not approve the mixed-method approach, EPA will select a mail only approach. The survey sample will be drawn based on three sub-samples of the study area: (1) General population within 100 miles of Cape Cod, (2) Recreational shellfishers in the study area, (3) Cape Cod residents.

For the survey pretest, 370 letters/surveys will be mailed. For the main survey, 4500 total letters/surveys will be mailed, tentatively broken down into 3000 for group 1, 750 for group 2, and 750 for group 3. This breakdown may change based on analysis and recommendations by Abt's statistician under Task 7. Contingent upon OMB approval, Abt will include a \$2 pre-incentive in the first mailing. EPA will provide the necessary printed hardcopy surveys. The mailing protocol will be:

- Mail Only:
 - First Packet Mailing (with pre-incentive)
 - Reminder Postcard
 - Second Packet Mailing
- Mail & Web:
 - Invitation Letter 1 (with pre-incentive)
 - Invitation Letter 2
 - Survey Packet Mailing

Abt Associates will print the cover letters, postcards, and provide Business Reply Envelopes; will handle postage costs; and will receive and log the surveys in a tracking database as they are returned.

Deliverables and schedule under Task 6

6a. Implement pretest survey instrument per OMB process, within 2 weeks of OMB approval.

6b. Implement mail/internet (or mixed-method) survey, beginning within 2 weeks of OMB approval of final survey instrument, to be completed within the timing specified by the final sampling strategy, depending on whether a one-time collection or survey waves is selected.

Task 7 – Support for compiling water quality metrics and site attributes and linking them to survey results (A.2.2 Benefit Analysis; A.6 Methodology Development and Technical Review)

The contractor shall provide assistance in compiling water quality metrics and other site attributes, and linking these metrics to survey data. This may include compilation of appropriate water quality measures and other attribute measures, in coordination with ORD and other EPA staff; and GIS support for linking these measures to appropriate geographic locations where survey respondents participate in water recreation.

Deliverables and schedule under Task 7

7a. Compilation of appropriate water quality and other measures within 4 weeks of receiving technical direction from WAM.

7b. GIS support to link water quality and other measures to recreational locations specified by survey respondents within 4 weeks of receiving technical direction from WAM.

Schedule for Deliverables:

Task	Deliverable	Form and Quantity	Schedule
Task 1	1a) Work plan	Electronic Document	Within 15 calendar days of work assignment receipt
	1b) Revised work plan	Electronic Document	Within 5 calendar days of receiving comments from CO
Task 2	2a) Supplementary Quality Assurance Project Plan (if necessary)	Electronic document	Within 60 calendar days of receipt of work assignment.
	2b) Monthly progress reports	Electronic document	Monthly
Task 3	3a) SNCVC memorandum	Electronic document	Within 7 calendar days of workplan approval

Task 4	4a) Create and deliver to EPA online survey functionality, including interactive mapping, for 2 survey versions.	Electronic documents and files	Within 8 weeks of receiving technical direction from WAM
Task 5	5a) Address follow-up questions and changes to ICR based on OMB review, in consultation with ORD	Electronic documents	Within 2 weeks of receiving technical direction from WAM
Task 6	6a) Implement pretest survey instrument per OMB process if needed.	NA	Within 2 weeks of OMB approval
	6b) Implement mail/internet (or mixed-method) survey	NA	Within 2 weeks of OMB approval of final survey instrument
Task 7	7a) Compilation of appropriate water quality and other measures.	Electronic documents and files	Within 4 weeks of receiving technical direction from WAM.
	7b) GIS support to link water quality and other measures to recreational locations specified by survey respondents.	Electronic files	Within 4 weeks of receiving technical direction from WAM.

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 4-45				
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:				
Contract Number EP-C-13-039			Contract Period 09/11/2013 To 07/31/2018 Base Option Period Number 4			Title of Work Assignment/SF Site Name Petroleum Refining Study				
Contractor ABT ASSOCIATES INC.					Specify Section and paragraph of Contract SOW A-s					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval						Period of Performance From 08/01/2017 To 07/31/2018				
Comments:										
<input type="checkbox"/> Superfund					Accounting and Appropriations Data					<input checked="" type="checkbox"/> Non-Superfund
SFO (Max 2) <input type="checkbox"/>		Note: To report additional accounting and appropriations data use EPA Form 1900-69A.								
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										
Authorized Work Assignment Ceiling										
Contract Period: 09/11/2013 To 07/31/2018		Cost/Fee:				LOE:				
This Action:										
Total:										
Work Plan / Cost Estimate Approvals										
Contractor WP Dated:					Cost/Fee			LOE:		
Cumulative Approved:					Cost/Fee			LOE:		
Work Assignment Manager Name James Covington <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>							Branch/Mail Code: Phone Number: 202-566-1034 FAX Number:			
Project Officer Name Ahmar Siddiqui <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>							Branch/Mail Code: Phone Number: 202-566-1044 FAX Number:			
Other Agency Official Name Nicholas Bisher <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>							Branch/Mail Code: Phone Number: FAX Number:			
Contracting Official Name Kathleen Rechenberg <div style="display: flex; justify-content: space-between;"> <div>_____</div> <div>_____</div> </div> <div style="display: flex; justify-content: space-between;"> <div>(Signature)</div> <div>(Date)</div> </div>							Branch/Mail Code: Phone Number: 513-487-2853 FAX Number:			

WORK ASSIGNMENT

I. Title: Economic Analysis for Petroleum Refining Study

Contractor: Abt Associates

Contract No.: EP-C-13-039

II. Work Assignment Number: 4-45

III. Estimated Period of Performance: Date of issuance through July 31, 2018

IV. Key EPA Personnel:

Work Assignment Contracting Officer Representative (WACOR):

James C. Covington, III
OST/EAD (4303T)
202/566-1034
202/566-1053 (fax)

V. Background and Purpose:

The 1972 Clean Water Act (CWA) directs EPA to develop national technology-based regulations for categories of industries that discharge pollutants directly to surface waters (effluent guidelines) or that discharge pollutants indirectly through sewage treatment plants (pretreatment standards). The CWA also directs EPA to develop national technology-based regulations for new industrial facilities (new source performance standards).

Under Executive Orders 12866 and 13563, EPA is required to estimate the potential benefits and costs to society. As such, the purpose of this Work Assignment (WA) is to review discharge information from petroleum refineries to determine whether the current effluent limitations guidelines and standards (ELGs) for these operations should be revised, examine the economic health and any community impacts.

Under this work assignment the contractor shall conduct all analyses requiring the collection and manipulation of data and models in accordance with the EPA approved quality assurance project plan (QAPP) was developed for this work. The QAPP shall describe the procedures for assuring the quality of the primary and secondary economic data used for this work assignment.

In carrying out the tasks specified in this work assignment, the contractor may be called upon to build upon and continue work performed under WA 3-45 under this Contract EP-C-13-039. The work performed under this work assignment will not duplicate work conducted under the previous work assignment.

VI. General Requirements of the Work Assignment and Schedule

Confidential Business Information (CBI): During the course of the work assignment, the

contractor will be accessing and evaluating CBI. As such, the contractor shall adhere to EPA's CBI policy and procedures as described in the contract clauses (Clauses H.15-H19 and H.21). The contractor must maintain CBI security clearance to use CBI information. The contractor shall not disclose any CBI to anyone other than EPA without prior written approval from the EPA WACOR. The contractor shall, at all times, adhere to Confidential Business Information (CBI) procedures when handling industry information. The contractor shall manage all reports, documents, and other materials and all draft documents developed under this work assignment in accordance with the procedures set forth in our "Office of Science and Technology Confidential Business Information Application Security Plan" (August 2011) or its successor approved plans.

Budget Reporting: The contractor under this work assignment is required to report to the EPA WACOR and EPA CL-COR when 75 percent of the total work assignment funding amount has been depleted. The contractor must also report to the EPA WACOR when 75 percent of the approved Workplan budget has been depleted.

Identification as Contracting Staff: To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and prior to the start of any meeting. Contractor personnel are prohibited from acting as the Agency's official representative. When speaking with the public, the contractor should refer all interpretations of policy to the EPA WACOR.

Limitation of Contractor Activities: The contractor shall submit drafts of all deliverables to the EPA WACOR for review prior to submission of the final product. These drafts will clearly specify the methods, procedures, considerations, assumptions, relevant citations, data sources and data that support any conclusions and recommendations. The contractor shall incorporate all EPA WACOR comments into all final deliverables, unless otherwise agreed upon by the EPA WACOR. The contractor shall adhere to all applicable EPA management control procedures as implemented by the EPA Contracting Officer (CO), EPA CL-COR, and EPA WACOR.

Quick Response: Under this Performance Work Statement the contractor may be required to provide information for use by EPA for quick responses and analyses of options, issues, and policy decisions. Quick responses are those which require completion in one to five working days.

Travel: The contractor may be required to travel under this work assignment. Travel may be to participate with EPA in on site data collection, in meetings with trade associations, and to meet with EPA to discuss methodology and other important issues associated with the project. A request for approval for any travel directly chargeable to this work assignment must be submitted and approved by the EPA CL-COR before travel begins.

Deliverable Formatting: All memos, draft comments, summaries and responses, and chapters are to be provided in electronic form using Word and/or Excel/Access, ArcView, or, in special cases another software program agreed to by EPA. Memos are to be written in a manner which will make them easy to turn into draft chapters for the Final Report. For deliverables that are in Word or pdf versions of Word documents, that are intended to be shared with management or the

public, the contractor shall use decimal align in all tables containing columns of numbers of varying digits, whether decimal places are reported or not. All final materials, e.g., memos, chapters, etc. are to be prepared only after receiving written technical direction from the EPA WACOR and will be formatted to be in compliance with the Section 508 Amendment to the Rehabilitation Act of 1973.

VII. Performance Work Statement

The EPA WACOR will review all deliverables in draft form and provide revisions and/or comments to the contractor. The contractor shall prepare the final deliverables incorporating the EPA WACOR's comments.

Task 1 - Prepare Workplan

The contractor shall prepare a workplan within 15 calendar days of receipt of a performance statement of work signed by the CO or 15 calendar days after the start of the contract period, whichever is later. The workplan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, a detailed cost estimate by task, and a staffing plan. The EPA WACOR, the CL-COR and the CO will review the workplan. However, only the CO can approve/disapprove, suggest revisions, or change the workplan. Official revisions will be given to the contractor by the CO. The contractor shall prepare a revised workplan incorporating the CO's comments, if required.

Deliverables and schedule under Task 1

1a. Workplan within 15 calendar days of receipt of work assignment.

Task 2 - Quality Assurance

QAPPs are required under the Agency's Quality Assurance Policy CIO-2105, formerly EPA Order 5360.1 A2 and implementing guidance CIO-2105-P-01-0. All projects that involve the generation, collection, analysis, and use of environmental data must have an approved QAPP in place prior to the commencement of the work. Examples of these environmental data operations are provided in **Table 1-1** below.

Table 1-1. Examples of work that involves the collection, generation, evaluation, analysis, or use of environmental data

Item	Examples
Data	Includes field sampling information (sample location information, flow measurements, temperature, pH, physical observations, etc.), laboratory measurements (e.g., chemical, physical, biological, radiological measurements), data collected from questionnaires, economic data, census data, and any other types of existing data (i.e., data generated for a different purpose or generated by a different organization)
Data generation	Includes field studies, laboratory studies, and generation of modeling output
Data collection	Includes field surveys, questionnaire surveys, literature searches, and third party data
Data evaluation	Includes data inspection, review, assessment, and validation

Table 1-1. Examples of work that involves the collection, generation, evaluation, analysis, or use of environmental data

Item	Examples
Data analysis	Includes statistical, engineering, and economic analysis, and testing, evaluation, and validation of methods and models; database creation, data extraction, and data manipulation
Data Use	Any use of data to support EPA decisions, regulations, policy, publications, or tools (including effluent guidelines, 304(m) program, standards, environmental assessments, and models, tools, or reports disseminated by EPA to assist other organizations in implementing environmental programs)

Note that QAPPs are required for the development or revision of models and software that support the generation, collection, evaluation, analysis, or use of data. (A model is set of equations and assumptions used to predict unknown data.) When existing models are used as a tool to generate or evaluate data, the project QAPP must describe the model and explain how it will be used and how its output will be evaluated to ensure the modeling effort meets the overall quality objectives for the project. Development or revision of new models also must be supported by a QAPP that describes the objectives for the model, the quality criteria that will be applied to the model, and the procedures for evaluating whether the model meets those criteria.

2.2 QA Project Plan Requirements

The Contractor has previously prepared a contract-wide Programmatic QAPP (PQAPP) for Contract EP-C-13-039. This PQAPP describes, in a single document, information that is not site or time-specific, but applies throughout the program (i.e., the duration of the contract). When tasked with preparing the PQAPP, the Contractor was informed that the PQAPP may need to be supplemented with project-specific details to support individual work assignments that involve the collection, generation, evaluation, analysis, or use of environmental data.

The activities in this work assignment may involve gathering, evaluating, analyzing, and otherwise using existing environmental data (also known as “secondary” use of data). However, EPA has determined that the Contractor is operating under the existing PQAPP and that the PQAPP addresses QA requirements for this work assignment. In support of this work assignment, the Contractor shall ensure that the work plan provides enough detail to clearly describe:

- Specific objectives of the project(s) supported by this work assignment, including typical questions that must be answered when using existing sources of data to perform economic analyses in support of the study of the petroleum refining industry.
- The type of data to be gathered or used under this work assignment to support the project objectives—including data from search engines, federal databases, EPA data bases—as a well as a rationale for when those databases are appropriate and what data available in each will support the project
- The quality objectives needed to ensure the data will support the project objectives, and
- The quality assurance/quality control (QA/QC) activities to be performed to ensure that any results obtained are documented and are of the type, quality, transparency, and reproducibility needed.

2.3 Additional QA Documentation Required

The EPA Quality Manual for Environmental Programs (CIO 2105-P-01-0, May 2000) requires published Agency reports containing environmental data to be accompanied by a readily identifiable section or appendix that discusses the quality of the data and any limitations on the use of the data with respect to their originally intended application. The EPA Quality Manual further requires Agency reports to be reviewed by the QA manager (or other authorized official) before publication to ensure that an adequate discussion of QA and QC activities is included. The purpose of the review is to ensure the reports provide enough information to enable a knowledgeable reader to determine if the technical and quality goals were met for the intended use of the data. Reports should include applicable statements regarding the use of any environmental data presented as a caution about possible misuse of the data for other purposes. For example, a Technical Support Document or Study Report must include a clear discussion of the quality management strategies (including the project goals and objectives, quality objectives and criteria, and QA/QC practices) that were employed to control and document the quality of data generated and used. These documents should also discuss any deviations from procedures documented in the EPA-approved QAPP(s) supporting the project, the reasons for those deviations, any impact of those deviations had on data quality, and steps taken to mitigate data quality issues.

In support of this Agency requirement, all major deliverables (e.g., Technical Support Documents, Study Reports, Analytical Methods) produced by the Contractor under this work assignment must include a discussion of the QA/QC activities that were performed to support the deliverable, and this discussion must provide a sufficient level of detail to allow the EAD QA Coordinator (or designee) to determine if the QA/QC strategies implemented for the project sufficiently support the intended use of the data. Upon receipt, the WACOR will review each applicable report and certify whether the Contractor has adhered to the QA requirements documented in the Contractor's PQAPP.

The Contractor also shall provide EPA with monthly reports of QA activities performed during implementation of this work assignment. These monthly QA reports shall identify QA activities performed to support implementation of this work assignment, problems encountered, deviations from the QAPP, and corrective actions taken. If desired, the Contractor may include this as a part of the contract-required monthly financial/technical progress report.

2.4 Data Quality Act/Information Quality Guidelines Requirements

The Data Quality Act (also known as the Information Quality Act) requires EPA to ensure that influential information disseminated by the Agency is sufficiently transparent in terms of data and methods of analysis that the information is capable of being substantially reproduced. To support compliance with these data transparency/ data reproducibility requirements, EPA plans to include QAPPs as part of any rulemaking record documentation to be made available to the public. (This includes PQAPPs and supplemental QAPPs (SQAPPs)). The Contractor may claim information in QAPPs as confidential; if the Contractor chooses to do so, the Contractor shall submit a sanitized (i.e., public) version and an unsanitized (i.e., confidential) version at the time the QAPP is submitted for approval by EPA. The sanitized version shall be included in the public docket for the applicable rulemaking (or other docket record), and the unsanitized version shall be included in a non-public (i.e., confidential) portion of the docket (or record).

Information contained in the approved QAPP shall be transparent and reproducible and meet the requirements of the Data Quality Act for influential information. EPA's *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity, of Information Disseminated by the Environmental Protection Agency* (EPA/260R-02-008, October 2002), referred to as "EPA's Information Quality Guidelines," describe EPA procedures for meeting Data Quality Act requirements. Section 6.3 of EPA's Information Quality Guidelines indicate that "especially rigorous robustness checks" should be applied in circumstances where quality-related information cannot be disclosed due to confidentiality issues. Where applicable, the Contractors should indicate which results were obtained using the tools (standard operating procedures (SOPs), checklists, and guidelines) that the Contractor designates as confidential so that the EPA WACOR can easily identify the areas that shall require rigorous robustness checks and document that those checks have been performed. At the discretion of the EPA WACOR, the Contractors may be requested to prepare pre-dissemination review checklist as described in Section 5.5 of the Office of Water Quality Management Plan, February 2009. If this is required, the EPA WACOR shall notify the Contractor through written technical direction.

2.5 Task 2 QA Deliverables

Deliverable	Projected Schedule Date
Monthly reports of QA work performed (may be included in the Contractor's monthly progress report)	Monthly throughout the WA period of performance

Table 1-2. Justification for Use of Existing PQAPP as the Sole Quality Documentation for Projects that Rely on Existing Data

QAPP Element	Sufficiently Addressed in PQAPP	Not Applicable to Project	Explanatory Comments
A1. Title & Approval Sheet			
Project title	X		WA X-XX Economic Support for Petroleum Refining Study.
Organization's name	X		Abt Associates
Effective date and/or version identifier	X		Page ii of PQAPP
Dated signature of Organization's project manager	X		Page ii of PQAPP
Dated signature of Organization's QA manager	X		Page ii of PQAPP
Other signatures, as needed (e.g., EAD Project Officer, EAD QA Coordinator)	X		Page ii of PQAPP
Revision History	X		Page ii of PQAPP
A2. Table of Contents			
Includes sections, figures, tables, references, and appendices	X		Page v of PQAPP
Document control information indicated (when required by the EPA Project Manager and QA Manager)	X		Page v of PQAPP
A3. Distribution List			
Includes all individuals who are to implement or otherwise receive the QAPP and identifies their organization	X		2.1 pages 5-7 of PQAPP
A4. Project/Task Organization			
Identifies key individuals with their responsibilities (e.g., data users, decision makers, project QA manager, Subcontractors, etc.) and contact info.	X		Reference PQAPP section 2.1 on page 5. Referencing table 2.1 and descriptions on page 7 of PQAPPOST WACOR: James C. Covington, III
Organization chart shows lines of authority & reporting responsibilities	X		Reference PQAPP section 2.1 for overall picture
Project QA manager position indicates independence from unit collecting/using data	X		Reference PQAPP section 2.1 for overall picture
A5. Problem Definition/Background			
Clearly states problem to be resolved, decision to be made, or hypothesis to be tested	X		PQAPP Section 2.2 – goal of program is to conduct economic analyses for ELGs See PQAPP table 2-2: cost-benefit and economic impact analysis, industry profiles, collection /preparation of reports, review and analysis of public comments, legislative and litigation support, database development and management,. Also see WA
Identifies project objectives or goals	X		See WA
Historical & background information			
Cites applicable technical, regulatory, or program-specific quality standards, criteria, or objectives	X		Section 2.2 – goal of program is to conduct economic analyses for ELGs and studies. See table 2-2 for specific analyses
A6. Project/Task Description			
List measurements to be made/data to obtain	X		Section 2.3 PQAPP
Notes special personnel or equipment requirements		x	
Provides work schedule		x	

QAPP Element	Sufficiently Addressed in PQAPP	Not Applicable to Project	Explanatory Comments
A7. Overall Quality Objectives & Criteria			
States overall quality objectives and limits needed to support the project goals and objectives cited in A5	X		See 2.3 of PQAPP
A8. Special Training Requirements/ Certifications			
Identifies specialized skills, training or certification requirements	X		See 2.5 of PQAPP
Discusses how this training will be provided/the necessary skills will be assured and documented	X		See 2.5 of PQAPP
A9. Project-level Documents & Records			
Describes process for distributing the approved QAPP and other planning documents (and updates) to staff	X		See section 2 of PQAPP
Identifies final work products that will result from the project	X		Section 2.6 of PQAPP
Describes the process for developing, reviewing, approving, and disseminating the final work products and individuals responsible for these processes	X		Appendix A of PQAPP
B1. Data Needs			
Detailed list/description of the specific data elements needed to support project goals	X		See Table 3-1 of PQAPP headings: Company Financial Data,, & Other Industry Data, & valuation and Economic Impact: including specifically:, US Census Bureau, EIA, RMS
Description of the scope of the data elements that you need (e.g., data supporting specific treatment options vs. the full range of options, data supporting the entire country vs. a specific geographic region)	X		See Table 3-1 of PQAPP headings: Company Financial Data,, & Other Industry Data, & valuation and Economic Impact: including specifically:, US Census Bureau, EIA, RMS
If project includes development or update of a project database, QAPP identifies and defines each database field		x	
B2. Potential Data Sources			
Identifies and describes potential sources of the existing data needed (e.g., photographs, topographical maps, facility or state files, census data, meteorological data, publications, etc.) and the rationale for their use	X		See Table 3.1 of PQAPP
If literature searches are used, describes the search engines that will be used and key search terms	X		See Table 3.1 of PQAPP
If databases or models will be used, describe the database (or model) in terms of who developed it and operates it and the type of data it contains	X		See table 3.2 of PQAPP
For other potential sources, describe the potential sources & rationale for considering or using each one		x	

QAPP Element	Sufficiently Addressed in PQAPP	Not Applicable to Project	Explanatory Comments
B3. Criteria for Selecting Data Sources			
Identifies each criterion that will be used to determine if the candidate data sources listed in B2 will meet your needs, and how each criterion is defined. (Criteria vary by project; examples include reliability, age, applicability, quantity, format, and others)	X		PQAPP 3.1.3 Criteria for Selecting Data Sources
Explains rating system used to evaluate source against each criterion		x	
B4. Data Value Selection Approach			
For data sources that meet the criteria identified in B3: Describes the criteria and procedures that will be used to determine which value(s) identified in the acceptable sources are most appropriate for use in the project	X		Section 3.1.4 of PQAPP
For data that do not meet these pre-established criteria but are the only data available, explains how the decision to use such data will be made and documented		x	
B5. Resolving Data Gaps			
Describes the process for identifying and addressing data gaps that still exist after candidate data sources have been evaluated and appropriate data values have been identified	X		Section 3.1.5 of PQAPP
Describes the process that will be used to address any new data needs revealed during the data gathering process (i.e., additional data elements not previously considered)		x	
B6. Data Gathering Documentation and Records			
Describes how results of the source selection and the data value selection will be documented, including any sources or values that were rejected and the rationale for not using them	X		See Section 3.1.6
For data that are deemed acceptable and that will be used, explains how each data element will be associated to its original source citation (i.e., bibliographic information, telephone contact reports, email messages, etc.)	X		See Section 3.1.6
C1. Standardization of Data Elements			
Describes the process to ensure that units and other key measures are captured and standardized (or otherwise made comparable) in the database	X		See Section 3.2.1

QAPP Element	Sufficiently Addressed in PQAPP	Not Applicable to Project	Explanatory Comments
If the project requires that all fields be standardized to a single set of units (e.g., US dollars for economic data, µg/L for chemical data), identifies the standard units that will be required for each data element	X		See Section 3.2.1
Identifies the procedures for converting data reported in other units to the standardized units, including any rounding or truncating procedures, and procedures for ensuring these conversions are performed correctly	X		See Section 3.2.1
If standardization of data elements is not needed, explains the process for ensuring that data presented in varying units are comparable enough for use in the project and that project staff members and other data users will be able to readily identify differences in units	X		See Section 3.2.1
C2. Data Entry			
Explains the process for manually entering selected data into the project database, who will be responsible for such data entry, and the QC strategies that will be used to ensure that the database accurately and completely captures the data as presented in the original source	X		See Section 3.2.2
C3. Merging or Uploading Electronic Data from Existing Sources			
If data are available electronically and will be uploaded or merged into the project database: describes the procedures that will be followed to ensure that errors are not introduced during the upload/merge process and that the final database reflects the original dataset(s)	X		See Section 3.2.3
C4. Data Review			
Describes the process for ensuring that the data have been recorded, transmitted, and processed correctly	X		See Section 3.2.4
C5. Data Storage and Manipulation			
Describes how the existing data will be stored	X		See Section 3.2.5
Describes who will be responsible for access to and maintenance of the stored data	X		See Section 3.2.5
Describes how the existing data will be incorporated with other project data to support the project goal/decision to be made	X		See Section 3.2.5

QAPP Element	Sufficiently Addressed in PQAPP	Not Applicable to Project	Explanatory Comments
Describes the QC strategies that will be employed to ensure that the integrity of the data is not compromised during data storage, access/retrieval, updates, or other manipulation	X		See Section 3.2.5
D1. Data Quality Verification and Data Quality Reporting			
Describes the process for verifying that the final set of data meets the overall criteria originally specified for the project	X		Section 3.3.1
Describes how these determinations will be documented and reported	X		Section 3.3.1
For data that don't meet the pre-established specifications, explains the process for determining if they are usable and how such decisions will be documented	X		Section 3.3.1
D2. Use/Analysis of the Existing Data			
Provides details regarding the exact means in which the data will be used to meet project objectives	X		Section 3.3.2
Includes an explanation or list of the information to be calculated and the data elements that will be used to make those calculations	X		Section 3.3.2
Includes applicable calculations and equations (if known) or explanations of how they will be developed	X		Section 3.3.2
Includes plans for excluding outliers	X		Section 3.3.2
D3. Methodology Documentation and Conceptual Review			
If exact methodologies for analyzing the data will need to be developed or modified during the course of data analysis, explains the process by which such methodologies will be documented, who is responsible for reviewing/approving their use, and how the methodologies will be checked to ensure they yield the desired products	X		Section 3.2.3
D4. Technical Review of the Data Analysis			
Describes activities that will be used to ensure the data analyses are being implemented as specified and will support project objectives	X		Section 3.3.4
Explains procedures for identifying and notifying appropriate personnel if changes to the originally planned procedures are warranted, and the process for approving, documenting and implementing such changes	X		Section 3.3.4

QAPP Element	Sufficiently Addressed in PQAPP	Not Applicable to Project	Explanatory Comments
D5. Final Verification of Data Analysis and Reconciliation with User Requirements			
Describes the process for reviewing the final work product to ensure that the work was generated in accordance with the QAPP, and that the work product addresses the overall project goals and objectives	X		Section 3.3.5
Describes how the results of this assessment will be documented	X		Section 3.3.5
Describes how any limitations of the data or data analyses that were used to prepare the final work product will be documented and communicated	X		Section 3.3.5

Task 3 - Prepare Standardized Naming Convention and Version Control Memorandum

The contractor shall adhere to the EPA WACOR approved standardized naming convention and version control (SNCVC) plan that was developed under the Construction and Development WA 0-01 of the contract EP-C-07-023 (WA0-01_T1_SNCVC_08.31.07_V1.pdf). The contractor shall use this standardized convention for all deliverables associated with this work assignment.

The EPA WACOR may request the contractor through written technical direction to amend the SNCVC memorandum at any point under this WA. The EPA WACOR will review the revised memorandum and then provide the contractor with written notification of approval or edits that need to be made. The contractor shall prepare the edited SNCVC memorandum incorporating the EPA WACOR's comments, if required. After receiving notification of approval the contractor shall use the revised SNCVC.

Deliverables and schedule under Task 3

3a. SNCVC memorandum within 7 calendar days of workplan approval.

3b. If required, revised memorandum within 3 calendar days of receipt of comments from the WACOR, at technical direction of WACOR.

Task 4- Industry Profile

The contractor shall continue development of the industry profile of the petroleum refining industry begun in the previous performance period's work assignment, WA 3-45. This product shall be formatted as a standalone report. The profile shall include a discussion of the financial health of the petroleum refining sector, addressing issues such as consolidation, small business characteristics, regulations (both currently in place and new potential regulatory efforts) that may affect the sector's profit margins, the geographic distribution of firms and how the spatial dispersion may impact financial and business decision making, and input/output products transportation that may impact petroleum refining facilities. The contractor, to the extent feasible, should characterize cost of capital for the sector, reporting metrics like customary debt to equity ratios, etc. The contractor shall characterize how petroleum refineries make decisions

about investment in new capital costs. The profile shall also include an industry outlook section (including crude oil input impacts on future outlooks).

The initial draft of this profile shall include a placeholder outline of information and analysis that will be added to the profile upon completion.

Deliverable	Due Date
Draft Refining Industry Profile	Draft refining profile will be due by June 1, 2018.
Final Refining Industry profile	Revised final draft will be due three weeks after comments from WACOR but no later than July 31, 2018.

Task5-Site Visits

The contractor shall provide support to EPA in conducting site visits at refineries. Support may include attending conference calls with engineering contractor and facility personnel to obtain facility information, providing financial and economic memos after site-visits, and conducting follow-up activities. If the EPA WACOR attends the site visit, the contractor shall maintain the information collected on the site visit by the EPA WACOR once it is provided to the contractor. The contractor shall assume 3 site visit economic/financial reports will be prepared under this task.

Deliverable	Due Date
Draft financial memo for site visit	Due two weeks after receipt of technical direction from the EPA WACOR
Final financial memo for site visit	Revised final versions are due two weeks after second set of comments from the WACOR, but no later than July 31, 2018.

Task 6-Environmental Justice Analysis Support

The contractor shall prepare an Environmental Justice (EJ) profile to support the Petroleum Refining study. The profile will describe the socioeconomic and demographic composition of populations within specified radiuses of the refineries in the Petroleum Refining database, with focus on the presence of populations of EJ interest (low income and minority populations, or EJ populations). The profile shall compare the presence of EJ populations in the specified nearby radiuses of refineries relative to the socioeconomic/demographic composition of larger areas (e.g., the Metropolitan Statistical Area, county, or other relevant jurisdictional unit) surrounding the refineries.

The contractor shall work the WACOR to outline potential process and considerations for accounting for EJ factors in the Petroleum Refining pre-regulation study.

Deliverable	Due Date
Draft environmental justice analysis methodology memorandum	Due two weeks after receipt of technical direction from the EPA WACOR
Final environmental justice analysis methodology memorandum	Revised final versions are due two weeks after second set of comments from the WACOR, but no later than July 31, 2018.

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 4-48				
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:				
Contract Number EP-C-13-039			Contract Period 09/11/2013 . To 07/31/2018 Base Option Period Number 4			Title of Work Assignment/SF Site Name Survey Development for Stated				
Contractor ABT ASSOCIATES INC.					Specify Section and paragraph of Contract SOW Section A.2.2, para 2, page(s) 6					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval					Period of Performance From 08/09/2017 To 07/31/2018					
Comments:										
<input type="checkbox"/> Superfund					Accounting and Appropriations Data					<input checked="" type="checkbox"/> Non-Superfund
SFO <input type="checkbox"/> (Max 2)					Note: To report additional accounting and appropriations data use EPA Form 1900-69A.					
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										
Authorized Work Assignment Ceiling										
Contract Period:		Cost/Fee:		LOE: 0						
09/11/2013 To 07/31/2018										
This Action:				126						
Total:				126						
Work Plan / Cost Estimate Approvals										
Contractor WP Dated:				Cost/Fee			LOE:			
Cumulative Approved:				Cost/Fee			LOE:			
Work Assignment Manager Name Chris Moore <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>							Branch/Mail Code: Phone Number: 202-566-2348 FAX Number:			
Project Officer Name Ahmar Siddiqui <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>							Branch/Mail Code: Phone Number: 202-566-1044 FAX Number:			
Other Agency Official Name Nicholas Bisher <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>							Branch/Mail Code: Phone Number: FAX Number:			
Contracting Official Name Noelle Mills <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>							Branch/Mail Code: Phone Number: 513-487-2171 FAX Number:			

WORK ASSIGNMENT

I. Title: Survey Development for Stated Preference Study of Water Quality Benefits

Contractor: Abt Associates

Contract No.: EP-C-13-039

II. Work Assignment Number:

III. Estimated Period of Performance: Date of Issuance through July 31, 2018

IV. Estimated Level of Effort: 126 hours

V. Key EPA Personnel:

Work Assignment Contracting Officers Representative (WACOR):

Chris Moore

Office of Policy 1809T

202-566-2348

202/566-1053 (fax)

VI. Background and Purpose:

The 1972 Clean Water Act (CWA) directs the Environmental Protection Agency (EPA or Agency) to develop national technology-based regulations for categories of industries that discharge pollutants directly to surface waters (effluent guidelines or ELGs) or that discharge pollutants indirectly through sewage treatment plants (pretreatment standards). The CWA also directs EPA to develop national technology-based regulations for new industrial facilities (new source performance standards).

Under Executive Orders 12866 and 13563, EPA is required to estimate the potential benefits and costs to society. As such, the purpose of this Work Assignment (WA) is to obtain contractor support for key activities needed to conduct a stated preference survey of the benefits of the improving surface water quality. Specifically, contractor support is needed for facilitating focus groups and cognitive interviews to aid in survey design and assist in preparing the Information Collection Request (ICR) to be submitted to Office of Management and Budget (OMB) for approval to conduct the subsequent survey.

Under this work assignment the contractor shall conduct all analyses requiring the collection and manipulation of data and models in accordance with the EPA approved quality assurance (QA) project plan. The QA project plan shall describe the procedures for assuring the quality of the primary and secondary economic data used for this work assignment.

VII. General Requirements of the Work Assignment and Schedule

Confidential Business Information: During the course of the work assignment, the contractor will not be accessing and evaluating CBI.

Budget Reporting: The contractor must also report to the EPA WACOR and Contract Level Contracting Officers Representative (CL-COR) when 75 percent of the approved work plan budget has been depleted.

Identification as Contracting Staff: To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and prior to the start of any meeting. Contractor personnel are prohibited from acting as the Agency's official representative. When speaking with the public, the contractor shall refer all interpretations of policy to the EPA WACOR.

Limitation of Contractor Activities: The contractor shall submit drafts of all deliverables to the EPA WACOR for review prior to submission of the final product. These drafts will clearly specify the methods, procedures, considerations, assumptions, relevant citations, data sources and data that support any conclusions and recommendations. The contractor shall incorporate all EPA WACOR comments into all final deliverables, unless otherwise agreed upon by the EPA WACOR. The contractor shall adhere to all applicable EPA management control procedures as implemented by the EPA Contracting Officer (CO), EPA CL-COR, and EPA WACOR.

Quick Response: Under this Performance Work Statement (PWS) the contractor may be required to provide information for use by EPA for quick responses and analyses of options, issues, and policy decisions. Quick responses are those which require completion in one to five working days.

Travel: EPA does not anticipate the need for non-local travel by contractor employees and/or subcontractors to support the scope of this work assignment.

Deliverable Formatting: All memos, draft comments, summaries and responses, and chapters are to be provided in electronic form using Word and/or Excel/Access, ArcView, or, in special cases another software program agreed to by EPA. Memos are to be written in a manner which will make them easy to turn into draft chapters for the Final Report. For deliverables that are in Word or pdf versions of Word documents, that are intended to be shared with management or the public, the contractor shall use decimal align in all tables containing columns of numbers of varying digits, whether decimal places are reported or not. All final materials, e.g., memos, chapters, etc. are to be prepared only after receiving written technical direction from the EPA WACOR and will be formatted to be in compliance with the Section 508 Amendment to the Rehabilitation Act of 1973.

VIII. Performance Work Statement

The EPA WACOR will review all deliverables in draft form and provide revisions and/or comments to the contractor. The contractor shall prepare the final deliverables incorporating the

EPA WACOR's comments.

Task 1 - Prepare Work Plan

The contractor shall prepare a work plan within 15 calendar days of receipt of the work assignment. The work plan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, a detailed cost estimate by task, and a staffing plan. The EPA WACOR, the CL-COR and the CO will review the work plan. However, only the CO can approve/disapprove, suggest revisions, or change the work plan. Official revisions will be given to the contractor by the CO. The contractor shall prepare a revised work plan incorporating the CO's comments, if required.

Deliverables and schedule under Task 1

1a. Work plan within 15 calendar days of receipt of work assignment.

Task 2 - Quality Assurance

The contractor shall conduct all analyses requiring the collection and manipulation of data and models in accordance with the EPA-approved programmatic quality assurance project plan (PQAPP) developed under work assignment 0-01 of this contract, supplemented as needed by procedures outlined in the QAPP previously developed for this work under contract EP-C-07-023. The PQAPP and QAPP describe procedures for assuring the quality of the primary and secondary environmental and economic data used for this work assignment. EPA will be conducting focus groups and interviews described below in Tasks 4 and 5. The contractor shall prepare transcripts of the focus groups and interviews and ensure their accuracy. The PQAPP describes procedures for data entry, data evaluation, and data quality verification that are sufficient to ensure the accuracy of text transcripts. The contractor shall revise this previously approved QAPP if needed to incorporate any changes to the analyses performed under this WA.

Task 3 - Prepare Standardized Naming Convention and Version Control Memorandum

The contractor shall adhere to the EPA WACOR approved standardized naming convention and version control (SNCVC) plan that was developed under the Construction and Development WA 0-01 of the contract EP-C-07-023 (WA0-01_T1_SNCVC_08.31.07_V1.pdf). The contractor shall use this standardized convention for all deliverables associated with this work assignment.

The EPA WACOR may request the contractor through written technical direction to amend the SNCVC memorandum at any point under this WA. The EPA WACOR will review the revised memorandum and then provide the contractor with written notification of approval or edits that need to be made. The contractor shall prepare the edited SNCVC memorandum incorporating the EPA WACOR's comments, if required. After receiving notification of approval the contractor shall use the revised SNCVC.

Deliverables and schedule under Task 3

3. If required, revised memorandum within 3 calendar days of receipt of comments from the EPA WACOR, at technical direction of EPA WACOR.

Task 4 - Arrange for 2 Focus Groups [Contract PWS Section A.2.2, para 2, page(s) 6]

The contractor shall arrange for the conduct of two focus groups to examine stated preference valuation approaches for estimating the benefits of improving water quality in the Chesapeake Bay watershed. The two focus groups shall be held in the Washington, D.C. area.

The contractor shall recruit focus group participants based on criteria developed by EPA and provided by the WACOR. The contractor shall arrange for each focus group to be conducted in an appropriate facility with audio-visual support. Each focus group shall be audio- and video-recorded in digital format and delivered to EPA electronically. The contractor shall also provide written transcripts for the focus groups. The contractor shall recruit 10-12 individuals for each focus group, with the goal of 8 participants in each group. Each focus group shall last approximately 2 hours and be conducted at a convenient time and in a convenient location.

The WACOR, in conjunction with the appropriate personnel in the National Center of Environmental Economics (NCEE) will secure information collection request (ICR) approval for the focus groups under an existing agreement with the Office of Management and Budget (OMB) for expedited review.

4a. Recruit participants for first focus group within 1 week of receiving final location information and criteria from EPA and for subsequent focus groups within 1 week of receiving criteria for those groups.

4b. Arrange audio- and/or video- recordings and written transcripts of each group within 1 week of receiving final location information from EPA and for subsequent focus groups within 1 week of receiving criteria for those groups.

4c. Submit audio- and video-recordings and written transcripts to WACOR within 1 week of completing each set of focus groups.

Task 5 - Arrange for 16 One-on-One Interviews [Contract PWS Section A.2.2, para 2, page(s) 6]

The contractor shall arrange for a series of up to 16 one-on-one interviews with potential respondents. Each interview shall last approximately 50-60 minutes. EPA will conduct these interviews to test drafts of the survey instrument and will provide all materials for the participants.

The contractor shall recruit participants according to criteria provided by the WACOR. The contractor shall provide an appropriate facility and location for these interviews. The contractor shall arrange for these interviews to be audio- and video-recorded in digital format and delivered to EPA electronically. The contractor shall also provide written transcripts of the interviews.

Eight interviews shall be held in each of the two locations identified by the WACOR.

The WACOR, in conjunction with the appropriate personnel in NCEE will secure ICR approval for the one-on-one interviews under an existing agreement with OMB for expedited review.

5a. Establish location and dates for first six one-on-one interviews within 1 week of receiving technical direction from WACOR.

5b. Recruit participants for the first set of interviews within 2 weeks of establishing location and dates for interviews, and recruit participants for the subsequent interviews according to technical direction from WACOR.

5c. Arrange audio- and video- recordings and written transcripts of each interview

5d. Submit audio- and/or video-recordings and written transcripts to WACOR within one week of completing each set of interviews.

WORK ASSIGNMENT

I. Title: Survey Development for Stated Preference Study of Water Quality Benefits

Contractor: Abt Associates

Contract No.: EP-C-13-039

II. Work Assignment Number:

III. Estimated Period of Performance: Date of Issuance through July 31, 2018

IV. Estimated Level of Effort: 126 hours

V. Key EPA Personnel:

Work Assignment Contracting Officers Representative (WACOR):

Chris Moore

Office of Policy 1809T

202-566-2348

202/566-1053 (fax)

VI. Background and Purpose:

The 1972 Clean Water Act (CWA) directs the Environmental Protection Agency (EPA or Agency) to develop national technology-based regulations for categories of industries that discharge pollutants directly to surface waters (effluent guidelines or ELGs) or that discharge pollutants indirectly through sewage treatment plants (pretreatment standards). The CWA also directs EPA to develop national technology-based regulations for new industrial facilities (new source performance standards).

Under Executive Orders 12866 and 13563, EPA is required to estimate the potential benefits and costs to society. As such, the purpose of this Work Assignment (WA) is to obtain contractor support for key activities needed to conduct a stated preference survey of the benefits of the improving surface water quality. Specifically, contractor support is needed for facilitating focus groups and cognitive interviews to aid in survey design and assist in preparing the Information Collection Request (ICR) to be submitted to Office of Management and Budget (OMB) for approval to conduct the subsequent survey.

Under this work assignment the contractor shall conduct all analyses requiring the collection and manipulation of data and models in accordance with the EPA approved quality assurance (QA) project plan. The QA project plan shall describe the procedures for assuring the quality of the primary and secondary economic data used for this work assignment.

VII. General Requirements of the Work Assignment and Schedule

Confidential Business Information: During the course of the work assignment, the contractor will not be accessing and evaluating CBI.

Budget Reporting: The contractor must also report to the EPA WACOR and Contract Level Contracting Officers Representative (CL-COR) when 75 percent of the approved work plan budget has been depleted.

Identification as Contracting Staff: To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and prior to the start of any meeting. Contractor personnel are prohibited from acting as the Agency's official representative. When speaking with the public, the contractor shall refer all interpretations of policy to the EPA WACOR.

Limitation of Contractor Activities: The contractor shall submit drafts of all deliverables to the EPA WACOR for review prior to submission of the final product. These drafts will clearly specify the methods, procedures, considerations, assumptions, relevant citations, data sources and data that support any conclusions and recommendations. The contractor shall incorporate all EPA WACOR comments into all final deliverables, unless otherwise agreed upon by the EPA WACOR. The contractor shall adhere to all applicable EPA management control procedures as implemented by the EPA Contracting Officer (CO), EPA CL-COR, and EPA WACOR.

Quick Response: Under this Performance Work Statement (PWS) the contractor may be required to provide information for use by EPA for quick responses and analyses of options, issues, and policy decisions. Quick responses are those which require completion in one to five working days.

Travel: EPA does not anticipate the need for non-local travel by contractor employees and/or subcontractors to support the scope of this work assignment.

Deliverable Formatting: All memos, draft comments, summaries and responses, and chapters are to be provided in electronic form using Word and/or Excel/Access, ArcView, or, in special cases another software program agreed to by EPA. Memos are to be written in a manner which will make them easy to turn into draft chapters for the Final Report. For deliverables that are in Word or pdf versions of Word documents, that are intended to be shared with management or the public, the contractor shall use decimal align in all tables containing columns of numbers of varying digits, whether decimal places are reported or not. All final materials, e.g., memos, chapters, etc. are to be prepared only after receiving written technical direction from the EPA WACOR and will be formatted to be in compliance with the Section 508 Amendment to the Rehabilitation Act of 1973.

VIII. Performance Work Statement

The EPA WACOR will review all deliverables in draft form and provide revisions and/or comments to the contractor. The contractor shall prepare the final deliverables incorporating the

EPA WACOR's comments.

Task 1 - Prepare Work Plan

The contractor shall prepare a work plan within 15 calendar days of receipt of the work assignment. The work plan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, a detailed cost estimate by task, and a staffing plan. The EPA WACOR, the CL-COR and the CO will review the work plan. However, only the CO can approve/disapprove, suggest revisions, or change the work plan. Official revisions will be given to the contractor by the CO. The contractor shall prepare a revised work plan incorporating the CO's comments, if required.

Deliverables and schedule under Task 1

1a. Work plan within 15 calendar days of receipt of work assignment.

Task 2 - Quality Assurance

The contractor shall conduct all analyses requiring the collection and manipulation of data and models in accordance with the EPA-approved programmatic quality assurance project plan (PQAPP) developed under work assignment 0-01 of this contract, supplemented as needed by procedures outlined in the QAPP previously developed for this work under contract EP-C-07-023. The PQAPP and QAPP describe procedures for assuring the quality of the primary and secondary environmental and economic data used for this work assignment. EPA will be conducting focus groups and interviews described below in Tasks 4 and 5. The contractor shall prepare transcripts of the focus groups and interviews and ensure their accuracy. The PQAPP describes procedures for data entry, data evaluation, and data quality verification that are sufficient to ensure the accuracy of text transcripts. The contractor shall revise this previously approved QAPP if needed to incorporate any changes to the analyses performed under this WA.

Task 3 - Prepare Standardized Naming Convention and Version Control Memorandum

The contractor shall adhere to the EPA WACOR approved standardized naming convention and version control (SNCVC) plan that was developed under the Construction and Development WA 0-01 of the contract EP-C-07-023 (WA0-01_T1_SNCVC_08.31.07_V1.pdf). The contractor shall use this standardized convention for all deliverables associated with this work assignment.

The EPA WACOR may request the contractor through written technical direction to amend the SNCVC memorandum at any point under this WA. The EPA WACOR will review the revised memorandum and then provide the contractor with written notification of approval or edits that need to be made. The contractor shall prepare the edited SNCVC memorandum incorporating the EPA WACOR's comments, if required. After receiving notification of approval the contractor shall use the revised SNCVC.

Deliverables and schedule under Task 3

3. If required, revised memorandum within 3 calendar days of receipt of comments from the EPA WACOR, at technical direction of EPA WACOR.

Task 4 - Arrange for 2 Focus Groups [Contract PWS Section A.2.2, para 2, page(s) 6]

The contractor shall arrange for the conduct of two focus groups to examine stated preference valuation approaches for estimating the benefits of improving water quality in the Chesapeake Bay watershed. The two focus groups shall be held in the Washington, D.C. area.

The contractor shall recruit focus group participants based on criteria developed by EPA and provided by the WACOR. The contractor shall arrange for each focus group to be conducted in an appropriate facility with audio-visual support. Each focus group shall be audio- and video-recorded in digital format and delivered to EPA electronically. The contractor shall also provide written transcripts for the focus groups. The contractor shall recruit 10-12 individuals for each focus group, with the goal of 8 participants in each group. Each focus group shall last approximately 2 hours and be conducted at a convenient time and in a convenient location.

The WACOR, in conjunction with the appropriate personnel in the National Center of Environmental Economics (NCEE) will secure information collection request (ICR) approval for the focus groups under an existing agreement with the Office of Management and Budget (OMB) for expedited review.

4a. Recruit participants for first focus group within 1 week of receiving final location information and criteria from EPA and for subsequent focus groups within 1 week of receiving criteria for those groups.

4b. Arrange audio- and/or video- recordings and written transcripts of each group within 1 week of receiving final location information from EPA and for subsequent focus groups within 1 week of receiving criteria for those groups.

4c. Submit audio- and video-recordings and written transcripts to WACOR within 1 week of completing each set of focus groups.

Task 5 - Arrange for 16 One-on-One Interviews [Contract PWS Section A.2.2, para 2, page(s) 6]

The contractor shall arrange for a series of up to 16 one-on-one interviews with potential respondents. Each interview shall last approximately 50-60 minutes. EPA will conduct these interviews to test drafts of the survey instrument and will provide all materials for the participants.

The contractor shall recruit participants according to criteria provided by the WACOR. The contractor shall provide an appropriate facility and location for these interviews. The contractor shall arrange for these interviews to be audio- and video-recorded in digital format and delivered to EPA electronically. The contractor shall also provide written transcripts of the interviews.

Eight interviews shall be held in each of the two locations identified by the WACOR.

The WACOR, in conjunction with the appropriate personnel in NCEE will secure ICR approval for the one-on-one interviews under an existing agreement with OMB for expedited review.

5a. Establish location and dates for first six one-on-one interviews within 1 week of receiving technical direction from WACOR.

5b. Recruit participants for the first set of interviews within 2 weeks of establishing location and dates for interviews, and recruit participants for the subsequent interviews according to technical direction from WACOR.

5c. Arrange audio- and video- recordings and written transcripts of each interview

5d. Submit audio- and/or video-recordings and written transcripts to WACOR within one week of completing each set of interviews.

Appendix 1

QA Checklist for Projects Utilizing Existing Data

The items noted in this checklist are adapted from those elements found in *EPA Requirements for QA Project Plans (QA/R-5)* (EPA, 2001a), but tailored to the use of existing data. Page references are from Secondary Data Quality Assurance Project Plan for project entitled: Western States Criteria and Rulemaking Support,” EPA Contract EP-C-12-006, Work Assignment No. 5-13.

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
A1. Title & Approval Sheet							
Project title	X						Page 3
Organization's name	X						Page 3
Effective date and/or version identifier	X						Page 3
Dated signature of Organization's project manager	X						Page 3
Dated signature of Organization's QA manager	X						Page 3
Other signatures, as needed (e.g., EAD Project Officer, EAD QA Coordinator)	X						Pages 3-4
Revision History	X						Page 5
A2. Table of Contents							
Includes sections, figures, tables, references, and appendices	X						Pages 6-7
Document control information indicated (when required by the EPA Project Manager and QA Manager)		X					
A3. Distribution List							
Includes all individuals who are to implement or otherwise receive the QAPP and identifies their organization	X						Page 7
A4. Project/Task Organization							
Identifies key individuals with their responsibilities (e.g., data users, decision makers, project QA manager, Subcontractors, etc.) and contact info.	X						Pages 11

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
Organization chart shows lines of authority & reporting responsibilities	X						Page 11
Project QA manager position indicates independence from unit collecting/using data	X						Page 11
A5. Problem Definition/Background							
Clearly states problem to be resolved, decision to be made, or hypothesis to be tested	X						Pages 7-8
Identifies project objectives or goals	X						Pages 7-8
Historical & background information		X					
Cites applicable technical, regulatory, or program-specific quality standards, criteria, or objectives	X						Pages 7-8
A6. Project/Task Description							
List measurements to be made/data to obtain	X						Page 11
Notes special personnel or equipment requirements		X					Pages 12-13
Provides work schedule		X					Work schedule provided in WA
A7. Overall Quality Objectives & Criteria							
States overall quality objectives and limits needed to support the project goals and objectives cited in Element A5.	X						Page 14
A8. Special Training Requirements/ Certifications							
Identifies specialized skills, training or certification requirements	X						Page 15
Discusses how this training will be provided/the necessary skills will be assured and documented	X						Page 15
A9. Project-level Documents & Records							
Describes process for distributing the approved QAPP and other planning documents (and updates) to staff	X						Pages 15-16

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
Identifies final work products that will result from the project	X						Page 15
Describes the process for developing, reviewing, approving, and disseminating the final work products and individuals responsible for these processes	X						Pages 15-16
B1. Data Needs							
Detailed list/description of the specific data elements needed to support project goals	X						Pages 16-17
Description of the scope of the data elements that you need (e.g., data supporting specific treatment options vs. the full range of options, data supporting the entire country vs. a specific geographic region)	X						Pages 16-17
If project includes development or update of a project database, QAPP identifies and defines each database field							Pages 16-17
B2. Potential Data Sources							
Identifies and describes potential sources of the existing data needed (e.g., photographs, topographical maps, facility or state files, census data, meteorological data, publications, etc.) and the rationale for their use	X						Pages 17-18
If literature searches are used, describes the search engines that will be used and key search terms	X						Pages 17-18
If databases or models will be used, describe the database (or model) in terms of who developed it and operates it and the type of data it contains	X						Pages 17-18
For other potential sources, describe the potential sources and rationale for considering or using each one	X						Pages 18 - 19

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
B3. Criteria for Selecting Data Sources							
Identifies each criterion that will be used to determine if the candidate data sources listed in B2 will meet your needs, and how each criterion is defined. (Criteria vary by project; examples include reliability, age, applicability, quantity, format, and others)	X						Pages 18-20
Explains rating system used to evaluate source against each criterion	X						Pages 18-20
B4. Data Value Selection Approach							
For data sources that meet the criteria identified in B3: Describes the criteria and procedures that will be used to determine which value(s) identified in the acceptable sources are most appropriate for use in the project	X						Pages 18-20
For data that do not meet these pre-established criteria but are the only data available, explains how the decision to use such data will be made and documented	X						Page 20
B5. Resolving Data Gaps							
Describes the process for identifying and addressing data gaps that still exist after candidate data sources have been evaluated and appropriate data values have been identified	X						Pages 20
Describes the process that will be used to address any new data needs revealed during the data gathering process (i.e., additional data elements not previously considered)	X						Page 20.

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
B6. Data Gathering Documentation and Records							
Describes how results of the source selection and the data value selection will be documented, including any sources or values that were rejected and the rationale for not using them	X						Pages 20-21 Note – in cases where sources or values were rejected, the EPA WACOR will have the contractor document reasons for rejection.
For data that are deemed acceptable and that will be used, explains how each data element will be associated to its original source citation (i.e., bibliographic information, telephone contact reports, email messages, etc.)	X						Pages 20-21

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
C1. Standardization of Data Elements							
Describes the process to ensure that units and other key measures are captured and standardized (or otherwise made comparable) in the database	X						Page 20
If the project requires that all fields be standardized to a single set of units (e.g., US dollars for economic data, ug/L for chemical data), identifies the standard units that will be required for each data element	X						Page 20
Identifies the procedures for converting data reported in other units to the standardized units, including any rounding or truncating procedures, and procedures for ensuring these conversions are performed correctly	X						Page 20
If standardization of data elements is not needed, explains the process for ensuring that data presented in varying units are comparable enough for use in the project and that project staff members and other data users will be able to readily identify differences in units	X						Page 22 Note -- If standardization of data elements is not needed, the EPA WACOR will ensure that contractor explains the process for ensuring that data presented in varying units are comparable enough for use in the project and that project staff members and other data users will be able to readily identify differences in units.
C2. Data Entry							
Explains the process for manually entering selected data into the project database, who will be responsible for such data entry, and the QC strategies that will be used to ensure that the database accurately and completely captures the data as presented in the original source	X						Pages 20-21

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
C3. Merging or Uploading Electronic Data from Existing Sources							
If data are available electronically and will be uploaded or merged into the project database: describes the procedures that will be followed to ensure that errors are not introduced during the upload/merge process and that the final database reflects the original dataset(s)	X						Pages 20-22
C4. Data Review							
Describes the process for ensuring that the data have been recorded, transmitted, and processed correctly	X						Pages 20-22
C5. Data Storage and Manipulation							
Describes how the existing data will be stored	X						Page 20-21
Describes who will be responsible for access to and maintenance of the stored data	X						Page 20-22
Describes how the existing data will be incorporated with other project data to support the project goal/decision to be made	X						Pages 20-22
Describes the QC strategies that will be employed to ensure that the integrity of the data is not compromised during data storage, access/retrieval, updates, or other manipulation	X						Pages 20-21

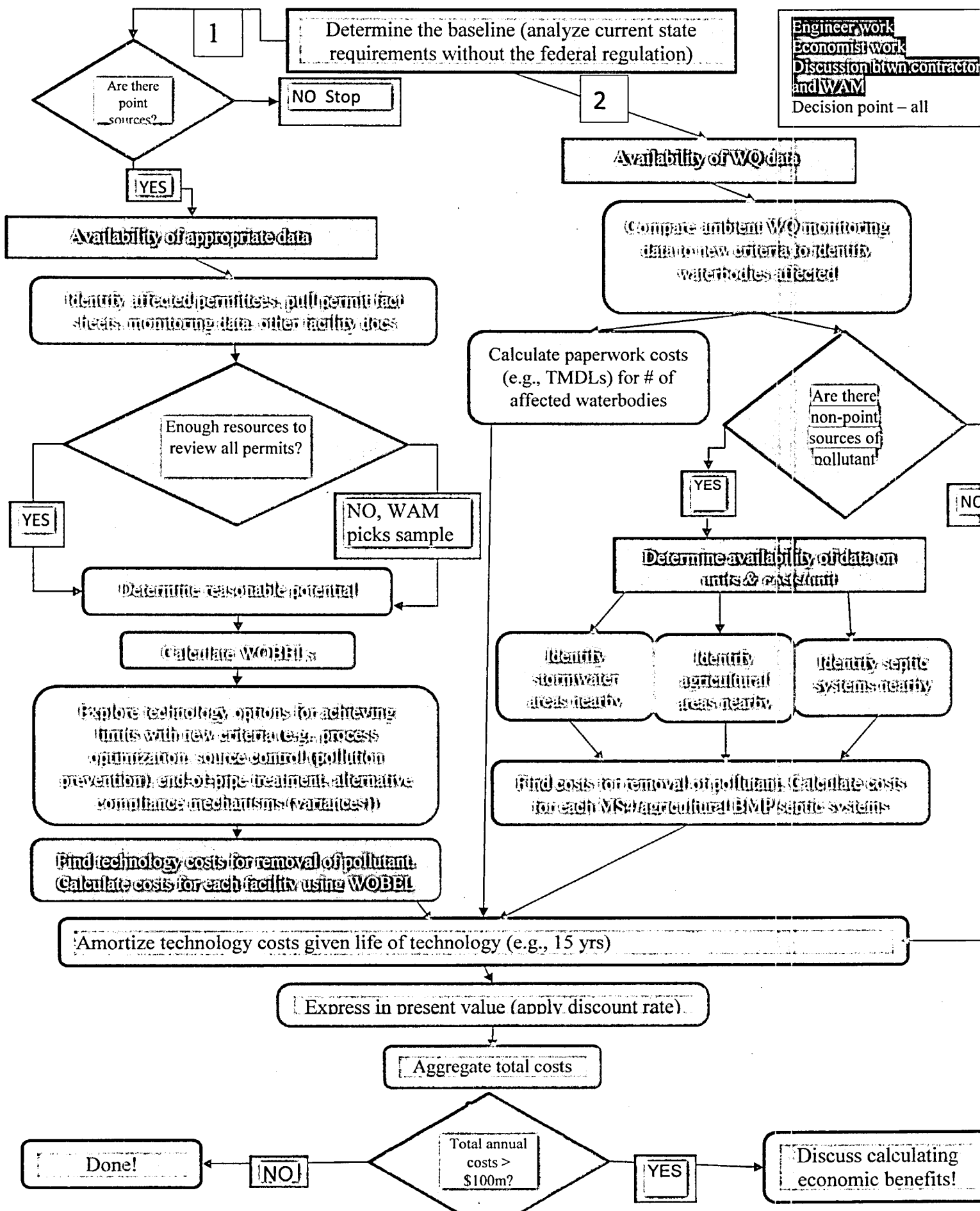
QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
D1. Data Quality Verification and Data Quality Reporting							
Describes the process for verifying that the final set of data meets the overall criteria originally specified for the project	X						Pages 21-22
Describes how these determinations will be documented and reported.	X						Pages 21-22
For data that don't meet the pre-established specifications, explains the process for determining if they are usable and how such decisions will be documented	X						Pages 21-22
D2. Use/Analysis of the Existing Data							
Provides details regarding the exact means in which the data will be used to meet project objectives	X						Page 22
Includes an explanation or list of the information to be calculated and the data elements that will be used to make those calculations	X						Page 22
Includes applicable calculations and equations (if known) or explanations of how they will be developed.	X						Page 22
Includes plans for excluding outliers.	X						
D3. Methodology Documentation and Conceptual Review							
If exact methodologies for analyzing the data will need to be developed or modified during the course of data analysis, explains the process by which such methodologies will be documented, who is responsible for reviewing/ approving their use, and how the methodologies will be checked to ensure they yield the desired products	X						Page 22

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
D4. Technical Review of the Data Analysis							
Describes activities that will be used to ensure the data analyses are being implemented as specified and will support project objectives	X						Page 22
Explains procedures for identifying and notifying appropriate personnel if changes to the originally planned procedures are warranted, and the process for approving, documenting and implementing such changes	X						Page 22
D5. Final Verification of Data Analysis and Reconciliation with User Requirements							
Describes the process for reviewing the final work product to ensure that the work was generated in accordance with the QAPP, and that the work product addresses the overall project goals and objectives	X						Page 22
Describes how the results of this assessment will be documented	X						Page 22
Describes how any limitations of the data or data analyses that were used to prepare the final work product will be documented and communicated	X						Page 22

Appendix 2

Basic Template for Economic Analysis for Water Quality Standards

Note: The color key for the roles and responsibilities of the engineer and economist, and the discussion and decision points, is matched to the background color immediately around the text in each element of the flow chart.



EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 4-57				
						<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:				
Contract Number EP-C-13-039			Contract Period 09/11/2013 To 07/31/2018 Base Option Period Number 4			Title of Work Assignment/SF Site Name Lead Free Rulemaking				
Contractor ABT ASSOCIATES INC.					Specify Section and paragraph of Contract SOW VI paragraph 2 & VIII					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval						Period of Performance From 08/01/2017 To 07/31/2018				
Comments: Support for OGWDW Lead rule.										
<input type="checkbox"/> Superfund Accounting and Appropriations Data <input checked="" type="checkbox"/> Non-Superfund										
SFO (Max 2) <input type="checkbox"/> Note: To report additional accounting and appropriations data use EPA Form 1900-69A.										
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										
Authorized Work Assignment Ceiling										
Contract Period:		Cost/Fee:		LOE:						
09/11/2013 To 07/31/2018										
This Action:										
Total:										
Work Plan / Cost Estimate Approvals										
Contractor WP Dated:				Cost/Fee			LOE:			
Cumulative Approved:				Cost/Fee			LOE:			
Work Assignment Manager Name Jessica Georges							Branch/Mail Code:			
							Phone Number: 202-564-0966			
							FAX Number:			
Project Officer Name Ahmar Siddiqui							Branch/Mail Code:			
							Phone Number: 202-566-1044			
							FAX Number:			
Other Agency Official Name Nicholas Bisher							Branch/Mail Code:			
							Phone Number:			
							FAX Number:			
Contracting Official Name Kathleen Rechenberg							Branch/Mail Code:			
							Phone Number: 513-487-2853			
							FAX Number:			

PERFORMANCE WORK STATEMENT

I. Title: Lead Free Rulemaking

Contractor: Abt Associates

Contract No.: EP-C-13-039

II. Work Assignment Number: 4-57

III. Estimated Period of Performance: Date of issuance through July 31, 2018

IV. Estimated Level of Effort: 945 hours

V. Key EPA Personnel:

Work Assignment Contracting Officer Representative (WACOR):

Jessica Georges
OW/OGWDW/SRMD (4607M)
(202) 564-0966
(202) 564-3758 (fax)
georges.jessica@epa.gov

VI. Background and Purpose:

The Reduction of Lead in Drinking Water Act (RLDWA) was enacted on January 4, 2011 to amend Section 1417 of the Safe Drinking Water Act (SDWA or Act) regarding the use and introduction into commerce of lead pipes, plumbing fittings or fixtures, solder and flux. The Act established a prospective effective date of January 4, 2014, which provided a three-year timeframe for affected parties to transition to the new requirements. The Community Fire Safety Act of 2013 further amends Section 1417 to exempt fire hydrants. EPA in December of 2013 developed a summary document of answers to frequently asked questions that is intended to help the public understand the statutory requirements of the two pieces of legislation. To further clarify and refine these statutory requirements in a new rulemaking, EPA published a proposed rule on January 17, 2017.

The Federal Register Notice is available at:

<https://www.federalregister.gov/documents/2017/01/17/2017-00743/use-of-lead-free-pipes-fittings-fixtures-solder-and-flux-for-drinking-water>

The purpose of this work assignment is to support EPA's clarifications and extensions to the RLDWA in the rulemaking: "Use of Lead Free Pipes, Fittings, Fixtures, Solder and Flux for Drinking Water." The work outlined in this work assignment is a continuation of the efforts initiated in other work assignments on other contracts and supports this new EPA Reduction of Lead in Drinking Water Implementation Rulemaking by providing the Agency with cost assessment, rulemaking support documents, comment summary and response documents, and

other technical assistance.

No duplication of previous work is to take place under this work assignment.

VII. General Requirements of the Work Assignment and Schedule

Confidential Business Information: During the course of the work assignment, the contractor will not be accessing and evaluating CBI.

Budget Reporting: The contractor under this work assignment is required to report to the EPA WACOR and Contract Level Contracting Officer Representative (CL-COR) when 75 percent of the total work assignment funding amount has been depleted. The contractor must also report to the EPA WACOR when 75 percent of the approved work plan budget has been depleted.

Identification as Contracting Staff: To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and prior to the start of any meeting. Contractor personnel are prohibited from acting as the Agency's official representative. When speaking with the public, the contractor should refer all interpretations of policy to the EPA WACOR.

Limitation of Contractor Activities: The contractor shall submit drafts of all deliverables to the EPA WACOR for review prior to submission of the final product. These drafts will clearly specify the methods, procedures, considerations, assumptions, relevant citations, data sources and data that support any conclusions and recommendations. The contractor shall incorporate all EPA WACOR comments into all final deliverables, unless otherwise agreed upon by the EPA WACOR. The contractor shall adhere to all applicable EPA management control procedures as implemented by the EPA Contracting Officer (CO), EPA CL-COR, and EPA WACOR.

Quick Response: Under this Performance Work Statement the contractor may be required to provide information for use by EPA for quick responses and analyses of options, issues, and policy decisions. Quick responses are those which require completion in one to five working days.

Travel: The contractor shall be required to travel under this work assignment. Travel may be to participate with EPA in on site data collection, in meetings with trade associations, and to meet with EPA to discuss methodology and other important issues associated with the project. A request for approval for any travel directly chargeable to this work assignment must be submitted and approved by the CL-COR before travel begins.

Deliverable Formatting: All memos, draft comments, summaries and responses, and chapters are to be provided in electronic form using Word and/or Excel/Access, ArcView, or, in special cases another software program agreed to by EPA. Memos are to be written in a manner which will make them easy to turn into draft chapters for the Final Report. For deliverables that are in Word or pdf versions of Word documents, that are intended to be shared with management or the public, the contractor shall use decimal align in all tables containing columns of numbers of varying digits, whether decimal places are reported or not. All final materials, e.g., memos,

chapters, etc. are to be prepared only after receiving written technical direction from the EPA WACOR and will be formatted to be in compliance with the Section 508 Amendment to the Rehabilitation Act of 1973.

Quality Assurance: Tasks 3 through 5 in this Work Assignment (WA) require the use of secondary data. The contractor shall use the Supplemental Quality Assurance Project Plan (SQAPP) completed under task 2 of WA 2-32 on this contract, and ensure the quality of secondary data used to complete tasks 3 through 5. The QA requirements must be addressed in the work plan and monthly progress reports as specified under Task 1, below.

VIII. Performance Work Statement

The EPA WACOR will review all deliverables in draft form and provide revisions and/or comments to the contractor. The contractor shall prepare the final deliverables incorporating the EPA WACOR's comments.

Task 1 - Prepare a Work Plan

The contractor shall prepare a work plan within 15 calendar days of receipt of the work assignment. The work plan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, a detailed cost estimate by task, and a staffing plan. In addition, the work plan shall include the requirement that all electronic and information technology (EIT) and all EIT deliverables be Section 508 compliant in accordance with the policies referenced at <http://www.epa.gov/accessibility/>.

The EPA WACOR, the CL-COR and the CO will review the work plan. However, only the CO can approve/disapprove, suggest revisions, or change the work plan. Official revisions will be given to the contractor by the CO. The contractor shall prepare a revised work plan incorporating the CO's comments, if required.

A weekly update call with the EPA WACOR and a monthly progress report will be required for this work assignment to discuss progress on deliverables, costs, and other potential issues.

The Monthly Progress Report shall indicate, in a separate QA section, whether significant QA issues have been identified and how they are being resolved. Monthly reports must include a table with the invoice LOE and costs' broken out by the tasks.

Deliverables and schedule under Task 1

1.a. Work plan within 15 calendar days of receipt of work assignment.

Task 2 - Provide Regulatory Flexibility Act (RFA) Technical Support for the Lead Free

Rulemaking

Task 2.1 – Lead Free Small Business Model

The contractor shall update and revise the Lead Free RFA analysis that was conducted under WA 2-32 of this contract. As a result of guidance and comment given during the option selection process the current RFA analysis must be updated to include assessment of revenue impacts for different definitions of small entities under the rule. The definition of small entities incurring third party and self-certification costs will vary across North American Industry Classification System (NAICS) codes. Also an assessment of impact shall be conducted based on product complexity requirements for third party and self-certification.

The contractor shall prepare draft deliverable spreadsheets for EPA WACOR review and approval.

Once the EPA WACOR reviews the draft spreadsheets and provides revisions and/or comments to the contractor, the contractor shall prepare a final version of the spreadsheets incorporating the EPA WACOR's comments.

For planning purposes, assume 3 sets of small business/product complexity definitions to be assessed. The contractor should assume three iterations on the spreadsheets: 2 drafts and 1 final.

Deliverables and schedule under Task 2.1

2.1a. Draft RFA spreadsheet model changes and due dates TBD listed or modified by written technical direction.

2.1b. Final RFA spreadsheet model changes due date listed or modified by written technical direction.

Task 2.2 - Lead Free Small Business Technical Support Document

Given final versions of the spreadsheets, the contractor shall revise the RFA report that was developed under WA 2-32 of this contract. The draft revised report shall be delivered to the EPA WACOR for review and approval.

Once the EPA WACOR reviews the draft report and provides revisions and/or comments to the contractor, the contractor shall prepare a final version of the report incorporating the EPA WACOR's comments.

Deliverables and schedule under Task 2.2

For the report, assume two drafts and one final draft report.

3.2a. Draft revised RFA report due dates TBD listed or modified by written technical direction.

3.2b. Final RFA report due date listed or modified by written technical direction.

Task 3 - Small Business Legal Analysis

The contractor shall, based on technical direction given by the EPA WACOR, provide legal analysis support related to the rulemaking. Such legal support may include but is not limited to questions about self-certification, labeling, marking and international issues. The contractor may also be requested to participate in and/or conduct briefings, assisting Agency economists in their review of the legal analyses, providing technical review of materials prepared for the rulemaking by Agency staff, and assist in the development of the rulemaking record. The contractor may also be required to review and summarize documents prepared by outside groups and/or other EPA offices.

The contractor shall prepare draft deliverable material for EPA WACOR review and approval.

Once the EPA WACOR reviews the draft materials and provides revisions and/or comments to the contractor, the contractor shall prepare a final version of the materials incorporating the EPA WACOR's comments.

Deliverables and schedule under Task 3

3.a. Draft deliverables and due dates TBD listed or delayed by written technical direction.

3.b. Final deliverable due dates listed or delayed by written technical direction.

Task 4 - Revisions to the benefits chapter for the Technical Support Document

Under this task, the contractor, based on written technical direction from the EPA WACOR, shall revise the proposed rule Technical Support Document to pertain to the benefits of the Lead-Free Rule for use in supporting the final rule.

Under this task, the TSD report benefits chapter may need to be revised further in response to public comments, changes in the technical data, comments from OW management, and agency workgroup members, as well as changes to the regulatory options from those of the proposed rule and/or technology efficacy results. These changes are expected to occur in several waves as the final rule moves through the agency review process. All changes will be given to the contractors by written Technical Direction. After each set of significant revisions initiated by technical direction, the contractor shall supply that portion or chapter of the TSD to the EPA WACOR for further review.

Once the EPA WACOR provides revisions and/or comments to the contractor, the contractor shall incorporate the changes into the draft TSD report benefits chapter.

The contractor should assume three iterations of each chapter: 2 drafts and 1 final.

Deliverables and schedule under Task 4

- 4.a. Draft deliverables and due dates TBD listed or delayed by written technical direction.
- 4.b. Final deliverable due dates listed or delayed by written technical direction.

Task 5 - Issue Papers and Technical Support

The contractor shall develop issue papers and technical analyses as identified through written technical direction by the EPA WACOR. EPA anticipates that some issues may become high priority during this review process and may require analytical support for internal Agency decision-making processes. Upon direction from the EPA WACOR, the contractor shall collect summary information on particular issues (e.g., manufacturing production practices), risk assessment background and status information, and perform preliminary cost-benefit analyses.

Deliverables: For work planning purposes, up to 3 analyses may be required.

- 5.a. Draft deliverables and due dates TBD listed or delayed by written technical direction.
- 5.b. Final deliverable due dates listed or delayed by written technical direction.

The contractor shall assume three iterations of each document: 2 drafts and 1 final.

EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment						Work Assignment Number 4-53 <input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:			
Contract Number EP-C-13-039			Contract Period 09/11/2013 To 07/31/2018 Base Option Period Number 4			Title of Work Assignment/SF Site Name Urban Waste Technical Asst			
Contractor ABT ASSOCIATES INC.				Specify Section and paragraph of Contract SOW Sections A-E					
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval						Period of Performance From 08/01/2017 To 07/31/2018			
Comments: Work shall not commence until August 1, 2017									
<input type="checkbox"/> Superfund		Accounting and Appropriations Data				<input checked="" type="checkbox"/> Non-Superfund			
SFO (Max 2) <input type="checkbox"/>		Note: To report additional accounting and appropriations data use EPA Form 1900-69A.							
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars) (Cents)	Site/Project (Max 8)	Cost Org/Code
1									
2									
3									
4									
5									
Authorized Work Assignment Ceiling									
Contract Period: 09/11/2013 To 07/31/2018		Cost/Fee:				LOE: 0			
This Action:						8,141			
Total:						8,141			
Work Plan / Cost Estimate Approvals									
Contractor WP Dated:				Cost/Fee		LOE:			
Cumulative Approved:				Cost/Fee		LOE:			
Work Assignment Manager Name Thomas Frankiewicz <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number: 202-343-9232 FAX Number:			
Project Officer Name Ahmar Siddiqui <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number: 202-566-1044 FAX Number:			
Other Agency Official Name Nicholas Bisher <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number: FAX Number:			
Contracting Official Name Noelle Mills <div style="display: flex; justify-content: space-between;"> <div>_____ (Signature)</div> <div>_____ (Date)</div> </div>						Branch/Mail Code: Phone Number: 513-487-2171 FAX Number:			

WORK ASSIGNMENT

I. Title: Urban Waste Technical Assistance and Network Support

Contractor: Abt Associates

Contract No.: EP-C-13-039

II. Work Assignment Number: 4-53

III. Estimated Period of Performance: Date of Issuance through July 31, 2018

IV. Estimated Level of Effort: 8,141 hours

V. Key EPA Personnel:

Work Assignment Contracting Officer's Representative (WACOR):

Tom Frankiewicz
OAR/OAP/CCD (4353TT)
202/343-9232

Alternate WACOR:

Monica Shimamura
OAR/OAP/CCD (4353RR)
202/ 343-9337

VI. Background and Purpose:

The 1972 Clean Water Act (CWA) directs the Environmental Protection Agency (EPA or Agency) to develop national technology-based regulations for categories of industries that discharge pollutants directly to surface waters (effluent guidelines) or that discharge pollutants indirectly through sewage treatment plants (pretreatment standards). The CWA also directs EPA to develop national technology-based regulations for new industrial facilities (new source performance standards).

Under Executive Orders 12866 and 13563, EPA is required to estimate the potential benefits and costs to society. As such, the purpose of this Work Assignment (WA) is to provide capacity building, technical assistance and tool support and development to cities to improve waste management and support networks of cities cooperating on improved waste management, including some of the following:

- **Multimedia analysis** of treatment and disposal options for the reduction of open dumping, diversion of organic waste from disposal sites, and improving the design and operations of disposal sites to prevent the migration of leachate into groundwater, air and greenhouse gas emissions.
- **Pollution prevention:** exploring options for organics diversion and treatment to avoid water and air pollution issues associated with dumpsites.

- **Economic market incentives:** to assist partners in evaluating and developing financing and cost recovery tools and policies to improve urban waste management.
- **Environmental benefit analysis:** including but not limited to environmental assessment, pre-feasibility assessments, and estimation of monetized and non-monetized benefits to improve solid waste management especially as it relates to groundwater and surface water protection. Examples include assisting partners in evaluating the potential benefits of leachate control from improved landfill design or operations. Partners may also benefit from assessment of potential air pollutant or greenhouse gas emission reductions from improved solid waste management: for example, by reducing the amount of organic waste deposited in landfills.

EPA is a lead partner in the United Nations Environment Program (UNEP) Climate and Clean Air Coalition (CCAC) Municipal Solid Waste Initiative (MSWI). The overarching goal of the MSWI is to enable cities, with the support of their regional and national governments, to move along the solid waste management hierarchy in a coordinated and cohesive manner in order to mitigate emissions, especially methane and black carbon. The initiative is flexible and takes into account the different needs of cities to reach an optimal waste management system based on their specific circumstances, including the need to address groundwater contamination from leachate.

Since 2012, participating cities and countries have come together to share their experience and expertise through peer-to-peer partnerships (e.g., sister city pairings), regional workshops to disseminate best practice, and a web-based knowledge-sharing platform to reach a global audience. The purpose of this assignment is to support EPA in its role as a lead partner of the initiative, including capacity building activities in India.

Under this work assignment the contractor shall conduct all analyses requiring the collection and manipulation of data and models in accordance with the EPA approved quality assurance project plan (QAPP) that was based on Task 2 QAPP language. The QAPP shall describe the procedures for assuring the quality of the primary and secondary environmental and economic data used for this work assignment.

In carrying out the tasks specified in this work assignment, the contractor may be called on to build upon and continue work performed under orders EP-B31H-0014 and No. EP-B14H-0016, issued under Contract No. GS-10F-0299K, BPA No. EP-BPA-12-H-0024. The work performed under this work assignment will not duplicate work conducted under the previously listed orders.

VII. General Requirements of the Work Assignment and Schedule

Confidential Business Information: During the course of the work assignment, the contractor will not be accessing and evaluating CBI.

Budget Reporting: The contractor must also report to the EPA WACOR when 75 percent of the approved Work plan budget has been depleted.

Identification as Contracting Staff: To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and prior to the start of any meeting. Contractor personnel are prohibited from acting as the Agency's official representative. When speaking with the public, the contractor shall refer all interpretations of policy to the EPA WACOR.

Limitation of Contractor Activities: The contractor shall submit drafts of all deliverables to the EPA WACOR for review prior to submission of the final product. These drafts will clearly specify the methods, procedures, considerations, assumptions, relevant citations, data sources and data that support any conclusions and recommendations. The contractor shall incorporate all EPA WACOR comments into all final deliverables, unless otherwise agreed upon by the EPA WACOR. The contractor shall adhere to all applicable EPA management control procedures as implemented by the EPA Contracting Officer (CO), EPA Contract-Level Contracting Officer's Representative (CL-COR), and EPA WACOR.

Quick Response: Under this Performance Work Statement (PWS), the contractor may be required to provide information for use by EPA for quick responses and analyses of options, issues, and policy decisions. Quick responses are those which require completion in one to five working days.

Travel: The contractor shall be required to travel under this work assignment. Travel may be to participate with EPA in on site data collection, in meetings with trade associations, and to meet with EPA to discuss methodology and other important issues associated with the project. A request for approval for any travel directly chargeable to this work assignment must be submitted and approved by the CL-COR before travel begins.

Deliverable Formatting: All memos, draft comments, summaries and responses, and chapters are to be provided in electronic form using Word and/or Excel/Access, ArcView, or, in special cases another software program agreed to by EPA. Memos are to be written in a manner which will make them easy to turn into draft chapters for the Final Report. For deliverables that are in Word or pdf versions of Word documents, that are intended to be shared with management or the public, the contractor shall use decimal align in all tables containing columns of numbers of varying digits, whether decimal places are reported or not. All final materials, e.g., memos, chapters, etc. are to be prepared only after receiving written technical direction from the EPA WACOR and will be formatted to be in compliance with the Section 508 Amendment to the Rehabilitation Act of 1973.

VIII. Performance Work Statement

The EPA WACOR will review all deliverables in draft form and provide revisions and/or comments to the contractor. The contractor shall prepare the final deliverables incorporating the EPA WACOR's comments.

Task 1 - Prepare Work Plan

The contractor shall prepare a work plan per contract requirements. The work plan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, a detailed cost estimate by task, and a staffing plan. The EPA WACOR, the CL-COR, and the CO will review the work plan. However, only the CO can approve/disapprove, suggest revisions, or change the workplan. Official revisions will be given to the contractor by the CO. The contractor shall prepare a revised work plan incorporating the CO's comments, if required.

Deliverable	Projected Schedule Date
Work Plan	Per contract requirements

Task 2 - Quality Assurance

Under this work assignment, the contractor shall conduct all analyses requiring the collection and manipulation of data and models in accordance with the EPA QAPP. Because this work assignment requires the contractor to collect or use environmental or economic data, a QAPP is required. The QAPP shall describe the procedures for assuring the quality of the primary and secondary environmental and/or economic data used for the work assignment.

Deliverable	Projected Schedule Date
QAPP	Within 15 calendar days after submittal of the Work Plan
Revised QAPP reflecting EPA comments, if needed	Within 10 calendar days of receipt of EPA comments
Monthly reports of QA work performed (may be included in the Contractor's monthly progress report)	Monthly throughout the WA period of performance

Task 3 - Prepare Standardized Naming Convention and Version Control Memorandum

The contractor shall prepare and submit a memorandum that proposes a standardized naming convention and version control (SNCVC) for all deliverables associated with the WA. This system will ensure that deliverables are clearly named and dated and that the sequence of versions of a document is clear. The EPA WACOR will review the memorandum and then provide the contractor with written notification of approval or edits that need to be made. The

contractor shall prepare a revised SNCVC memorandum incorporating the EPA WACOR's comments, if required. After receiving notification of approval the contractor shall use this standardized convention for all deliverables associated with the work assignment(s). The EPA WACOR may request the contractor through written technical direction to amend the SNCVC memorandum at any point during the WA.

Deliverable	Projected Schedule Date
SNCVC memorandum	Within 7 calendar days of Work Plan approval
Revised SNCVC memorandum, if needed	Within 3 calendar days of receipt of EPA comments

Task 4 – Technical Assistance

EPA is a lead partner of the CCAC MSWI. As a lead partner, EPA supports cities in developing countries in improving their solid waste management to address local environmental conditions as well as global climate change. While the nature of the work will vary from city to city, the type of assistance offered is expected to fall within the following categories: collection, recycling, waste diversion, composting, anaerobic digestion, landfill gas energy, closing dump sites, engineered sanitary landfills, management and leadership, and sustainable financing. In an effort to scale-up and “catalyze” waste management improvements at a national level, EPA will also be working with 1-2 national level governments to share best practices on waste management to reduce SLCP emissions.

The contractor shall support capacity building and knowledge exchanges where U.S. government and other stakeholders from the waste sector exchange information with local experts on key issues affecting short lived climate pollutants (SLCPs) across the waste sector. It is not expected that the contractor will have to develop all original materials. It is, in fact, preferable to leverage other existing materials and models from other Initiative implementers and partners such as United Nations Environment Program - International Environmental Technology Centre (UNEP-IETC), International Solid Waste Association (ISWA) and World Bank.

While EPA may occasionally be the lead in working with cities on assessing waste treatment options, it will often be providing support to other lead implementers. In some cases, assistance will be on an ad hoc bases or on discreet projects, such as providing onsite training on landfill remediation or closure. In other cases, the work will be on an on-gong basis. For example, given the priority set by the CCAC on improving waste management in India, Mexico, and Southeast Europe, EPA will be providing ongoing technical assistance, assessment and training to regional city networks. The technical assistance will include technical working sessions to design and implement proper waste management techniques; onsite field training to identify and address problems; site visits to waste management facilities in the U.S. and other countries; and development of online training modules. Technical assistance to promote best practices on waste management to reduce SLCP emissions may include desktop research or tailored training and

technical guidelines.

Deliverable	Projected Schedule Date
4 technical working sessions	2 within 6 months of work plan approval and 2 within 12 months of work plan approval
2 onsite field training	1 within 6 months of work plan approval and 1 within 12 months of work plan approval
Site visit to U.S. waste management facilities	Within 8 months of work plan approval
6 online training modules	Within 8 months of work plan approval
2 best practices reference document on waste management to reduce SLCP emissions	1 within six months of work plan approval and 1 within 12 months of work plan approval

Task 5 – Environmental and Economic Assessment

Analysis and pre-feasibility assessments will include but not be limited to environmental assessment, pre-feasibility assessments, and estimation of monetized and non-monetized benefits to improve solid waste management especially as it relates to groundwater and surface water protection. Examples include assisting partners in evaluating the potential benefits of leachate control from improved landfill design or operations.

The contractor shall prepare studies that will be used to assess technical and economic feasibility of specific projects that will achieve quantifiable emissions reductions. Not every project will be able to receive the full level of effort of a pre-feasibility study, so it is expected that two to three studies will be performed for cities that either highlight specific types of projects such as landfill gas energy project or the market for certain kinds of waste handling processes such as composting of green waste or small-scale anaerobic digestion of market waste.

The contractor shall compile tools and resources to support and augment the capacity building activities. The development of these tools and resources will allow cities to become aware of the latest methods to improve municipal solid waste (MSW) management and to mitigate emissions from the waste sector. The tools and resources will draw on existing resources developed by the EPA, the Global Methane Initiative, C40, the World Bank, and other leading experts in the international waste sector, but will be customized for use under the MSWI. For example, the SLCP baseline emissions estimation tool and the economics of organics management tool developed for EPA shall be updated with current information and will also be made user friendly for audiences in developing countries.

Deliverable	Projected Schedule Date
2-3 Tailored MSW Trainings	1 within 6 months of work plan approval and 1-2 within 12 months of work plan approval
2 technical assessment studies	1 within six months of work plan approval and 1 within 10 months of work plan approval
Update 2-3 Existing Tools	Within 6 months of work plan approval

2 Guidance documents for existing tools	Within 3-6 months of work plan approval
1 National-level Policy Assessment	Within 8 months of work plan approval

Task 6 – Communication and Outreach

Outreach, publications, and conference participation are essential in communicating technical, environmental, and economic information developed under this assignment. The contractor shall be expected to represent the initiative at various internal and external CCAC coordination meetings and activities that will include CCAC partners such as United Nations Environment Program, World Bank and other governmental and non-government organizations. The contractor should be well-versed in the issues of climate, environment, and integrated solid waste management and have extensive past experience working with cities on the implementation of climate and environment activities in developing and developed countries.

The contractor shall engage in a broad range of communication activities to support outreach within the CCAC framework. These activities will augment outreach to stakeholders and cities' success stories, best practices and other lessons learned through a variety of media and forums, forge partnerships, and generate feedback to improve the ability of the Coalition to meet the needs of implementing partners. Examples of activities to facilitate the exchange of information between solid waste officials and city leaders include attending technical information sessions, one-on-one stakeholder meetings, and international waste information exchanges; support for mentor cities, developing and disseminating reports, case studies, sector papers, fact sheets, and country and/or regional profiles and other materials that advance consideration of SLCPs in the waste sector; and presenting at private, public, institutional sponsored forums, including government-to-government meetings, technical workshops, and other venues. The development and delivery of activities will be closely coordinated within the CCAC framework. This coordination and interaction will determine the overall extent and number of communication activities for which the MSWI provides support.

Deliverable	Projected Schedule Date
Facilitation of the CCAC session at ISWA Congress (September, 2017)	Within 2 months of work plan approval
6 communications products	Within 9 months of work plan approval
2 case studies on best practices	Within 8 months of work plan approval
2 presentations	Within 8 months of work plan approval
1 paper for peer reviewed publication	Within 8 months of work plan approval

EPAUnited States Environmental Protection Agency
Washington, DC 20460**Work Assignment**

Work Assignment Number:

4-58

☐

Other

☐

Amendment Number:

Contract Number

EP-C-13-039

Contract Period 09/11/2013 To 07/31/2018

Base

Option Period Number 4

Title of Work Assignment/SF Site Name

Econ Sup't for WQS

Contractor

ABT ASSOCIATES INC.

Specify Section and paragraph of Contract SOW

Section VI, Paragraphs 1, 2 and 3

Purpose:

☒

Work Assignment

☐

Work Assignment Close-Out

☐

Work Assignment Amendment

☐

Incremental Funding

☐

Work Plan Approval

Period of Performance

From 08/01/2017 To 07/31/2018

Comments:

☐

Superfund

Accounting and Appropriations Data

☒

Non-Superfund

SFO

(Max 2)

☐

Note: To report additional accounting and appropriations data use EPA Form 1900-69A.

Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										

Authorized Work Assignment Ceiling

Contract Period:

Cost/Fee:

LOE: 0

09/11/2013 To 07/31/2018

This Action:

1,250

Total:

1,250

Work Plan / Cost Estimate Approvals

Contractor WP Dated:

Cost/Fee

LOE:

Cumulative Approved:

Cost/Fee

LOE:

Work Assignment Manager Name Wendy Hoffman

Branch/Mail Code:

Phone Number: 202-564-8794

FAX Number: 202-566-1053

(Signature)

(Date)

Project Officer Name Ahmar Siddiqui

Branch/Mail Code:

Phone Number: 202-566-1044

FAX Number:

(Signature)

(Date)

Other Agency Official Name

Branch/Mail Code:

Phone Number:

FAX Number:

(Signature)

(Date)

Contracting Official Name Kathleen Rechenberg

Branch/Mail Code:

Phone Number: 513-487-2853

FAX Number:

(Signature)

(Date)

**PERFORMANCE WORK STATEMENT (PWS)
Work Assignment 4-58**

I. Title: Economics Support for Water Quality Standards Rulemakings

Contractor: Abt Associates

Contract No.: EP-C-13-039

II. Work Assignment Number: 4-58

III. Performance Period: Date of issuance to July 31, 2018

IV. Estimated Level of Effort: 1,250 hours

V. Key EPA Personnel:

Work Assignment Contracting Officer Representative (WACOR) and Task Manager for Subtask 4.2:

Wendy Hoffman

U.S. EPA, Office of Water

1200 Pennsylvania Ave., N.W., 4303T

Washington, DC 20460

Phone: (202) 564-8794

Email: hoffman.wendy@epa.gov

Alternate WACOR and Task Manager for Subtask 4.1:

Michael Trombley

U.S. EPA, Office of Water

1200 Pennsylvania Ave., N.W., 4303T

Washington, DC 20460

Phone: (202) 564-3906

Email : trombley.michael@epa.gov

VI. Background and Purpose

Section 303(c) of the Clean Water Act (CWA) directs states to adopt water quality standards (WQSs) for their navigable waters. Under CWA section 304(a), EPA periodically publishes criteria recommendations for states to use when setting water quality criteria for particular parameters to protect recreational and aquatic life uses of waters. Where EPA has published recommended criteria, states have the option of adopting water quality criteria based on EPA's CWA section 304(a) criteria guidance, modified to reflect site-specific conditions or other scientifically defensible methods. EPA encourages states to consider adopting the agency's published 304(a) recommended criteria into their WQSs. In addition, CWA section 303(c)(4)(B) authorizes the Administrator to determine, even in the absence of a state submission, that a new or revised standard is needed to meet CWA requirements. Any new or revised WQSs must be submitted to EPA for review and approval or disapproval. Whenever EPA disapproves a state's WQS submittal as being inconsistent with the CWA, Section 303(b)(1) to (2) gives the Agency 90 days from the date of disapproval to propose federal regulations, and 190 days from the date of publication of the proposed rule to promulgate final federal WQSs, unless the state takes action in the interim.

Setting criteria in WQSs is based on science. Even though economic factors are not decisive in establishing WQSs, EPA has chosen to conduct economic analyses in support of federal WQS regulations. Generally, the purpose of such an analysis is, at a minimum, to inform the public of the costs associated with the rule, and to ensure that estimates of costs, benefits or other impacts take the point of view of society as a whole, rather than reflect the point of view of a limited set of stakeholders. In some cases, a WQSs rule may be economically significant (have "an annual effect on the economy of \$100 million or more"), in which case, E.O. 12866 requires EPA to conduct a full benefit-cost analysis. Recent examples of states with federal water quality standards rulemakings, where the EPA Administrator determined that a new or revised standard was needed to meet CWA requirements, and EPA conducted an economic analysis, include Florida, California, Washington, Maine, Oregon and Idaho. Only the Florida rule rose to the economically significant level.

To meet the responsibility of developing and promulgating updated aquatic life and aquatic-dependent wildlife criteria for the state WQS identified in Task 4 of this WA, EPA needs to provide information on potential costs and benefits that may be indirectly associated with state implementation of these new criteria. As such, the general purpose of this work assignment is to assess potential costs and benefits that may be indirectly associated with state implementation of these updated site-specific criteria for the state WQSs identified in Task 4.

The contractor shall provide information on potential costs that may be associated with implementation of the rules covered by this work assignment to determine the rules' potential economic impacts. Although EPA's revised WQSs will not independently change any existing NPDES permits, CWA section 303(d) lists or Total Maximum Daily Loads (TMDLs), nor are they independently enforceable, EPA anticipates that the revised WQS may eventually lead to new impaired waters listings or new findings during National Pollutant Discharge Elimination System (NPDES) permit development of a reasonable potential (RP) for a discharge to cause or contribute to a violation of water quality standards. Potentially incrementally impaired water

listings may require associated new TMDLs analyses, new or revised NPDES permit conditions for point source dischargers, and/or control requirements or best management practices (BMPs) on other sources (e.g., agriculture, urban runoff, and septic systems). Nonpoint source, watershed-based plans may also be needed to be eligible for CWA Section 319 funding. New RP findings may require new water quality-based effluent limits in NPDES permits. EPA will provide the contractor with the water quality criteria that are part of the WQSs, along with other information regarding how the criteria are to be applied. EPA may also assist with the identification of permits in those states that discharge into waters affected by the promulgation of new WQSs covered by this WA, or that discharge into waters upstream of affected waters, if relevant, for the work under this WA.

The economic analyses are assessments of the potential cost of implementing the new WQSs. The analyses should take into account technologies and other controls that may be used to meet the criteria in waters newly identified as impaired as a result of the new criteria. The economic analyses conducted under this WA represent the difference in estimates of the potential costs between a state's current WQSs and the EPA-revised WQSs. Note that full compliance with current WQSs should be assumed by these analyses.

Under this WA, which continues the work the contractor conducted under WA 3-58 of this contract, EPA will continue to conduct work on the economic analyses for Missouri and Oregon. EPA and/or another contractor to EPA may provide information on potential controls and engineering costs that may be associated indirectly with implementation of these revised WQSs. The contractor shall conduct all analyses requiring the collection and transformation of existing (secondary) data and models in accordance with the EPA-approved quality assurance project plan (QAPP) which it has developed for WA 5-13 under Contract EP-C-12-006 and amended by letter to cover the analyses in this WA for Missouri and Oregon. The EPA WACOR will provide all technical direction related to this work in writing.

Work conducted under this WA shall not duplicate work conducted under any other WA.

VI. General Requirements of the Work Assignment

Identification as Contracting Staff: To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and prior to the start of any meeting. Contractor personnel are prohibited from acting as the Agency's official representative. When speaking with the public, the contractor should refer all interpretations of policy to the EPA WACOR.

Limitation of Contractor Activities: The contractor shall submit drafts of all deliverables to the EPA WACOR for review prior to submission of the final product. These drafts shall clearly specify the methods, procedures, considerations, assumptions, relevant citations, data sources and data that support any conclusions and recommendations. The contractor shall incorporate all EPA WACOR comments into all final deliverables, unless otherwise agreed upon by the EPA WACOR. The contractor shall adhere to all applicable EPA management control procedures as implemented by the EPA Contracting Officer (CO), EPA Contract Level COR (CL-COR) and

EPA WACOR. The contractor shall not exceed the contract limit in any printing or duplication activities under this WA.

Quick Response: Under this work assignment the contractor may be required to provide information for use by EPA for quick responses and analyses of options, issues, and policy decisions. Quick responses are those which require completion in one to five working days.

Travel: The contractor may be required to travel under this work assignment. Travel may be to meet with EPA officials to discuss methodology and other important issues associated with the regulatory impact analysis. We estimate up to two trips each requiring one or two contractor personnel, per subtask under Task 4. The EPA WACOR will determine the destination and the activities for which the contractor shall travel, if need arises, in the future. Contractor personnel shall clearly identify their affiliation prior to the start of any meeting. Contractor personnel are prohibited from acting as the Agency's official representative. Request for approval for any travel directly chargeable to this work assignment must be submitted and approved by the CL-COR before travel begins.

Deliverables: The EPA WACOR will review all deliverables in draft form and provide revisions and/or comments to the contractor. The contractor shall prepare the final deliverables incorporating the EPA WACOR's comments. At the close of the WA period, the contractor shall provide EPA with final copies of all records, datasets, documents and project file items associated with Task 4.

Deliverable Formatting: All memos, draft comments, summaries and responses, and chapters are to be provided in electronic form using Word and/or Excel/Access, ArcView, or, in special cases, another software program agreed to by EPA. Memos are to be written in a manner which will make them easy to turn into draft chapters for a final report. For deliverables that are in Word or pdf versions of Word documents, and that are intended to be shared with management or the public, the contractor shall use decimal align in all tables containing columns of numbers of varying digits, whether decimal places are reported or not. All final materials, e.g., memos, chapters, etc. are to be prepared only after receiving written technical direction from the EPA WACOR.

VIII. Performance Work Statement

Task 1: Prepare Work Plan and Cost Estimates

Estimated LOE hours: 18 hours

The contractor shall prepare a work plan for the tasks below. The work plan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, a detailed cost estimate by task, and a staffing plan. The EPA WACOR, the CL-COR, and the CO will review the work plan. The EPA WACOR, the PO and the CO will review the work plan. However, only the CO can approve or disapprove, suggest revisions, or change the work plan.

Official revisions will be given to the contractor by the CO. The contractor shall prepare a revised work plan incorporating the CO's comments, if required.

Deliverables and schedule under Task 1:

1. Work plan is due 15 calendar days after receipt of work assignment.

Task 2: Prepare a Quality Assurance Plan for Literature Search, Data Collection and Analyses

Estimated LOE: 15 hours

2.1 Background

QAPPs are required under the Agency's Quality Assurance Policy CIO-2105, formerly EPA Order 5360.1 A2 (May 2000), and implementing guidance CIO-2105-P-01-0 (May 2000). All projects that involve the generation, collection, analysis, and use of environmental data must have an approved QAPP in place prior to the commencement of the work. Examples of these environmental data operations are provided in Table 2.1 below.

Table 2.1. Examples of work that involves the collection, generation, evaluation, analysis, or use of environmental data

Item	Examples
Data	Includes field sampling information (sample location information, flow measurements, temperature, pH, physical observations, etc.), laboratory measurements (e.g., chemical, physical, biological, radiological measurements), data collected from questionnaires, economic data, census data, and any other types of existing data (i.e., data generated for a different purpose or generated by a different organization)
Data generation	Includes field studies, laboratory studies, and generation of modeling output
Data collection	Includes field surveys, questionnaire surveys, literature searches, and third party data
Data evaluation	Includes data inspection, review, assessment, and validation
Data analysis	Includes statistical, engineering, and economic analysis, and testing, evaluation, and validation of methods and models; database creation, data extraction, and data manipulation
Data Use	Any use of data to support EPA decisions, regulations, policy, publications, or tools (including effluent guidelines, 304(m) program, standards, environmental assessments, and models, tools, or reports disseminated by EPA to assist other organizations in implementing environmental programs)

Note that QAPPs are required for the development or revision of models and software that support the generation, collection, evaluation, analysis, or use of data. (A model is set of

equations and assumptions used to predict unknown data.) When existing models are used as a tool to generate or evaluate data, the project QAPP must describe the model and explain how it will be used and how its output will be evaluated to ensure the modeling effort meets the overall quality objectives for the project. Development or revision of new models also must be supported by a QAPP that describes the objectives for the model, the quality criteria that will be applied to the model, and the procedures for evaluating whether the model meets those criteria.

2.2 QA Project Plan Requirements

The contractor has previously prepared a QAPP entitled, “Secondary Data Quality Assurance Project Plan for the project entitled, “Western States Criteria and Rulemaking Support,” for WA 5-13, under Contract EP-C-12-006. The activities in this work assignment involve gathering, evaluating, analyzing, and otherwise using existing environmental data (also known as “secondary” use of data). EPA has determined that the work under this WA may be conducted under this QAPP (with the letter amendment to add Missouri and Oregon to the list of locations to which the QAPP will be applicable), and that the QAPP addresses QA requirements for this work assignment. The current QAPP includes information on:

- Specific objectives of the project(s) supported by this work assignment, including typical questions that must be answered when the contractor is using existing sources of data to perform economic analyses in support of EPA’s promulgation of state WQSs;
- The type of data to be gathered or used under this work assignment to support the project objectives—including data from search engines, federal databases, EPA data bases—as well as a rationale for when those databases are appropriate and what data available in each will support the project;
- The quality objectives needed to ensure the data will support the project objectives; and,
- The quality assurance/quality control (QA/QC) activities to be performed to ensure that any results obtained are documented and are of the type, quality, transparency, and reproducibility needed.

Appendix 1 at the end of this PWS contains the QA Checklist for this project, which demonstrates how the QAPP addresses QA requirements for this work assignment. The contractor shall fill in staff roles in the table in the ‘explanatory comments’ under A.4 and make any additional detailed notes in the explanatory comments column as requested by the WACOR. The contractor shall then include the completed table as a separate Appendix 1 to the work plan upon submittal to EPA. This Appendix 1 should be a stand-alone document if QA documentation is requested. Therefore, the table title must include the title of the WA, WA number, and contract number. The WACOR has provided this information in the title, which the contractor may use to fulfill this requirement.

2.3 Additional QA Documentation Required

The EPA Quality Manual for Environmental Programs (CIO 2105-P-01-0, May 2000) requires published Agency reports containing environmental data to be accompanied by a readily identifiable section or appendix that discusses the quality of the data and any limitations on the use of the data with respect to their originally intended application. The EPA Quality Manual further requires Agency reports to be reviewed by the QA manager (or other authorized official)

before publication to ensure that an adequate discussion of QA and QC activities is included. The purpose of the review is to ensure that the reports provide enough information to enable a knowledgeable reader to determine whether the technical and quality goals were met for the intended use of the data. Reports should include applicable statements regarding the use of any environmental data presented as a caution about possible misuse of the data for other purposes. For example, a Technical Support Document or Study Report must include a clear discussion of the quality management strategies (including the project goals and objectives, quality objectives and criteria, and QA/QC practices) that were employed to control and document the quality of data generated and used. These documents should also discuss any deviations from procedures documented in the EPA-approved QAPP(s) supporting the project, the reasons for those deviations, any impact those deviations had on data quality, and steps taken to mitigate data quality issues.

In support of this Agency requirement, all major deliverables (e.g., Technical Support Documents, Economic Analyses, Study Reports, Analytical Methods) produced by the contractor under this work assignment must include a discussion of the QA/QC activities that were performed to support the deliverable. This discussion must provide a sufficient level of detail to allow the EAD QA Coordinator (or designee) to determine whether the QA/QC strategies implemented for the project sufficiently support the intended use of the data. Upon receipt, the EPA WACOR will review each applicable report and certify whether the contractor has adhered to the QA requirements documented in the contractor's QAPP.

The contractor also shall provide EPA with monthly reports of QA activities performed during implementation of this work assignment. These monthly QA reports shall identify QA activities performed to support implementation of this work assignment, problems encountered, deviations from the QAPP, and corrective actions taken. If desired, the contractor may include this report as a part of the contract-required monthly financial/technical progress report.

2.4 Data Quality Act/Information Quality Guidelines Requirements

The Data Quality Act (also known as the Information Quality Act) requires EPA to ensure that influential information disseminated by the Agency is sufficiently transparent in terms of data and methods of analysis so that the information could be substantially reproduced. To support compliance with these data transparency/data reproducibility requirements, EPA plans to include QAPPs as part of any rulemaking record documentation to be made available to the public. The contractor may claim information in QAPPs as confidential; if the contractor chooses to do so, the contractor shall submit a sanitized (i.e., public) version and an unsanitized (i.e., confidential) version at the time the QAPP is submitted for approval by EPA. The sanitized version shall be included in the public docket for the applicable rulemaking (or other docket record), and the unsanitized version shall be included in a non-public (i.e., confidential) portion of the docket (or record).

Information contained in the approved QAPP shall be transparent and reproducible and meet the requirements of the Data Quality Act for influential information. EPA's *Guidelines for Ensuring and Maximizing the Quality, Objectivity, Utility, and Integrity, of Information Disseminated by the Environmental Protection Agency* (EPA/260R-02-008, October 2002), referred to as "EPA's

Information Quality Guidelines,” describe EPA procedures for meeting Data Quality Act requirements. Section 6.3 of EPA’s Information Quality Guidelines indicates that “especially rigorous robustness checks” should be applied in circumstances where quality-related information cannot be disclosed due to confidentiality issues. Where applicable, the contractor should indicate which results were obtained using the tools (standard operating procedures (SOPs), checklists, and guidelines) that the contractor designates as confidential so that the EPA WACOR can easily identify the areas that require rigorous robustness checks and document that those checks have been performed. At the discretion of the EPA WACOR, the contractor may be requested to prepare pre-dissemination review checklist as described in Section 5.5 of the Office of Water Quality Management Plan, February 2009. If this is required, the EPA WACOR will notify the contractor through written technical direction.

Deliverables and schedule

1. Monthly reports of QA work performed (may be included in contractor’s monthly progress report) due monthly throughout the WA period of performance. The monthly progress report shall breakdown costs by subtask.

Task 3: Adhere to Standardized Naming Convention and Version Control Memorandum

Estimated LOE hours: 0 hours

The contractor shall adhere to the EPA WACOR-approved standardized naming convention and version control (SNCVC) plan which was developed under the Construction and Development WA 0-01 of Contract EP-C-07-023 (WA0-01_T1_SNCVC_08.31.07_V1.pdf). The contractor shall use this standardized convention for all deliverables associated with this work assignment.

Task 4: Economic Analyses

Estimated Total LOE for Task 4: 1,217 hours

EPA has constructed a flowchart (see Appendix 2) describing the standard process for developing an economic analysis of a WQSs rulemaking, and the roles various parties play; the focus of this work assignment is the economics work, while the engineering work is most likely conducted under another contract. In general, an early step is to determine the baseline for the rule. While this step is sometimes straightforward, it is often complicated when EPA is regulating in place of a state because there may be costs and benefits associated with *achieving* the baseline. The purpose of this WA is not to estimate such costs and benefits because they are not costs and benefits associated with EPA’s WQSs rulemaking. There may, however, be instances where estimating baseline costs is a necessary step in estimating incremental costs. The contractor shall estimate baseline costs only in the case where the EPA WACOR issues written technical direction to do so.

Once the baseline is established, the contractor shall determine the availability of the data on ambient water quality monitoring (for ascertaining potentially incrementally impaired waters)

and data on point source dischargers (i.e., facilities in industries with demonstrated RP or permit limits for the pollutants for which criteria are being set by the WQSs, and for which RP should be analyzed and the subset for which technology costs should be estimated). The contractor shall at a minimum estimate the administrative costs associated with TMDLs for potentially incrementally impaired waters. Depending on the circumstances, the subtasks below may call upon the contractor to estimate control costs for nonpoint sources, assuming adequate data is available to estimate costs of control for stormwater runoff, agricultural and forestry sources, and septic systems.

While EPA or another contractor will estimate the engineering costs associated with pollution control, the contractor shall convert such engineering capital and operation and maintenance (O&M) costs into a stream of future costs over the life of the technologies, and annualize using both 3% and 7% discount rates. The 3% discount rate estimates will form the basis of EPA's primary estimates of costs, while the 7% discount rate estimates shall be included in an appendix, in order to comply with OMB's Circular A-4 requirements. Unless specifically noted in the subtasks below, the contractor shall not analyze the benefits of achieving the WQSs.

The contractor shall use EPA criteria documents and any other relevant existing analyses provided by the EPA WACOR, including relevant TMDLs, as a starting point for the economic analyses in the subtasks below. For the economic analyses, the EPA WACOR will provide the contractor with data on point and nonpoint source dischargers located in the states identified in subtasks below that may be affected by the revised aquatic life and aquatic-dependent wildlife criteria, and human health criteria. The point and nonpoint sources may include, but are not limited to: agriculture, forestry, mining, municipal wastewater treatment plants, industrial wastewater, urban storm water, septic systems, and atmospheric deposition.

The EPA WACOR will provide the contractor with data from the Economic Analysis document on criteria prepared for each of the rulemakings identified in subtasks below. Note that the documents prepared by another contractor for EPA, which include engineering costs and information on water quality and TMDLs, are also called Economic Analyses, but are not the same economic analyses which the contractor will prepare under this WA. To avoid confusion in this PWS, the Economic Analyses prepared by the other contractor are referred to here as the overall Economic Analyses. The overall Economic Analyses will identify and document a baseline of water quality based on current water quality standards and TMDLs, and then estimate the incremental change needed to meet the proposed aquatic life and aquatic-dependent wildlife criteria, and human health criteria. These data will include summarized monitoring data and permit limits for the relevant contaminant related to the existing criteria for the contaminant(s), including all relevant water quality data (including monitoring data from environmental and conservation groups) for the contaminant.

If EPA proposes additional options for proposed human health and/or aquatic life criteria, the EPA WACOR will provide the contractor with estimates of the additional incremental changes and the contractor shall use them to provide new cost estimates. Where appropriate for a particular cost category, the contractor shall provide lower and upper bound estimates.

If specified below, the contractor shall also use the estimated incremental change to estimate benefits of new human health criteria if requested by the EPA WACOR. The contractor shall consider the use of cancer cases and other illnesses avoided. If applicable, the contractor shall use value of a statistical life and treatment costs of avoided illness for the benefits analysis. The contractor shall also estimate any water quality benefits from the incremental change of new aquatic life criteria. If available, the contractor shall present nonuse benefits in addition to the use benefits for the criteria change. If specified below, the contractor also shall present a discussion of qualitative benefits in the overall Economic Analyses.

The following data will be provided to the contractor by the EPA WACOR for each of the economic analyses:

- Baseline criteria (where available).
- NPDES permitted dischargers by facility type (major/minor) and category.
- The potential engineering control costs to municipal and industrial point sources associated with compliance with the revised human health criteria. Compliance costs may result from changes to NPDES permit requirements and associated effluent limitations.
- The cost of any Best Management Practices (BMPs) identified by EPA.

The economic analyses developed under subtasks below shall have the following common elements:

1. An appendix at the back of each EA, modeled on the Washington State overall Economic Analysis which the EPA WACOR will provide. The appendix shall provide the details of the sample facility results (facility-specific details will be provided in the overall Economic Analysis and include the extrapolation of statewide costs for major dischargers under each rule). The contractor shall annualize capital costs, including study costs (e.g., dilution, variance) and program (e.g., pollution prevention) over the assumed life of the equipment using 3% and 7% discount rates to obtain total annual costs per facility. Wherever a range of costs is available, the contractor shall calculate a minimum and maximum annual cost for each facility in the sample and then apply those costs to all other facilities in that category statewide.

2. Where labor cost data are available for pollution prevention (P2) programs for source controls for individual pollutants (e.g., mercury), the contractor shall use the most recent local labor rate data from the Bureau of Labor Statistics (BLS) and update cost components for changing price levels using the Gross Domestic Product Implicit Price Deflator (GDP-IPD) from the Department of Commerce's Bureau of Economic Analysis.

The contractor shall summarize the unit costs utilized in the sample facility compliance cost analyses for industrial and municipal dischargers that would need to reduce pollutants as a result of the revised criteria.

3. The contractor shall include an Uncertainty and Quality Assurance table containing a description of each potential uncertainty and/or assumption affecting the cost estimate, the effect on the cost estimate (positive, negative, or ambiguous), and any additional notes. The table should be modeled on Exhibit 6-3, Uncertainties in Analysis of Costs, in the "Economic Analysis for Water Quality Standards Applicable to the State of Washington" prepared under Contract # EP-C-13-039.

Only the EPA WACOR has the authority to issue technical direction to the contractor for work under the subtasks in this WA. The Task Managers do not have the authority to issue technical direction. The Task Managers named in **V. Key Personnel** will review and provide comments on all deliverables and relay those comments to the EPA WACOR to provide to the contractor. All technical direction issued by the EPA WACOR must be in writing.

Subtask 4.1: Economic Analysis for WQS for Missouri Lakes Numeric Nutrients Criteria

Estimated LOE: 985 hours

The state of Missouri has narrative nutrients criteria for more than 800 of its lakes (the exception is 25 lakes for which numeric nutrients criteria were set by Missouri, and approved by EPA in 2011). Under a court order, EPA will issue federal numeric nutrients criteria for the lakes with narrative nutrients criteria, covering total nitrogen, total phosphorus and chlorophyll-a. Because the pollutants of concern are nutrients, EPA expects that the economic analysis will need to consider, at a minimum, point sources that are POTWs, other point source categories with numeric limits for nutrients (if any), and nonpoint sources associated with agricultural activity. The criteria are likely to apply to waters with drinking water as a designated use, as well as for aquatic life support.

A key step in the analysis will be to ascertain the baseline, and establish a way to estimate which lakes are impaired under the baseline. EPA does not intend to estimate costs associated with improving waters that are impaired under the baseline, unless it is necessary to do so, either as the upper bound on costs, assuming that none of the lakes are impaired under the baseline, or as a courtesy to the public to place the costs of this rule within the context the total cost of all lakes meeting the numeric nutrients criteria. Should it be necessary to estimate baseline costs, the EPA WACOR will issue written technical direction requesting the analysis. The main challenge will be that the state does not have information that would help make this step straightforward.

Under this subtask, the contractor shall complete work on the draft Economic Analysis begun under WA 3-58 of this contract, for the proposed WQS for Missouri based on the revised numeric nutrients criteria. The EA shall contain the elements described above under Task 4 of this WA. A draft Economic Analysis shall be provided to the EPA WACOR via the Task Manager for an initial review. The EPA WACOR will provide revisions and/or comments to the contractor and the contractor shall incorporate the changes into a final Economic Analysis for the proposed rule. All comments will be provided to the contractor through written technical direction by the EPA WACOR. The contractor should expect three sets of significant revisions. After each set of significant revisions, the contractor shall submit draft materials to the EPA WACOR for review. The contractor shall include a description of the QA measures taken in completing this task. Work conducted under this subtask shall not duplicate work conducted under any other WA.

Deliverables and schedule under Subtask 4.1:

- 4.1a.** Draft final Economic Analysis for the proposed rule due no later than August 28, 2017 based on technical direction provided by the EPA WACOR.
- 4.1b.** Revised drafts for each set of significant revisions due three calendar days after receipt of written technical direction from the EPA WACOR.
- 4.1c.** Final Economic Analysis for proposed rule due no later than December 15, 2017.

Subtask 4.2: Economic Analysis for WQS for Oregon Aluminum Criteria

Estimated LOE: 232 hours

Aluminum naturally occurs at low levels in surface waters but, at higher concentrations, can be toxic to aquatic life. Activities such as bauxite mining, alumina refining, production of aluminum products, and manufacturing processes can increase levels of aluminum in surface waters. In addition, alum (potassium aluminum sulfate) used in clarification processes in drinking water and wastewater processes, can contribute to levels of aluminum in surface waters.

In 2013, EPA disapproved the state of Oregon's freshwater acute and chronic aluminum criteria. Oregon has not yet adopted and submitted revised freshwater acute and chronic aluminum criteria to EPA, so EPA proposes to establish federal freshwater acute and chronic aluminum criteria that take into account the best available science, EPA policies, guidance and legal requirements, to protect aquatic life uses in Oregon from the effects of exposure to harmful levels of aluminum.

Under this subtask, the contractor shall complete work on the draft Economic Analysis begun under WA 3-58 of this contract, for the proposed WQS for Oregon for aluminum. EPA will provide the contractor with updated draft EPA aluminum criteria documents for aluminum for Oregon, and other updated relevant existing analyses, including relevant TMDLs. The EPA WACOR will provide the contractor with updated information on point and nonpoint source dischargers located in Oregon that may be affected by the aluminum criteria. Given the very small number of point sources, the contractor may not be able to estimate a range of costs.

The EPA WACOR will provide revisions and/or comments to the contractor and the contractor shall incorporate the changes into a final Economic Analysis for the proposed rule. All comments will be provided to the contractor through written technical direction by the EPA WACOR. The contractor should expect three sets of significant revisions. After each set of significant revisions, the contractor shall submit draft materials to the EPA WACOR for review. The contractor shall include a description of the QA measures taken in completing this task. Work conducted under this subtask shall not duplicate work conducted under any other WA.

Deliverables and schedule under Subtask 4.2:

- 4.2a.** Draft final Economic Analysis for the proposed rule due no later than August 28, 2017 based on technical direction provided by the EPA WACOR.
- 4.2b.** Revised drafts for each set of significant revisions due three calendar days after receipt of written technical direction from the EPA WACOR.

4.2c. Final Economic Analysis for the proposed rule due no later than Dec. 15, 2017.

VI. SCHEDULE OF DELIVERABLES:

Task	Deliverable	Due
1	Work plan	Due within 15 calendar days after WA receipt.
2	Monthly reports of QA work performed	May be included in monthly progress reports.
3	Adhere to SNCVC memorandum	No deliverables under this task.
4.1	EA for Proposed Missouri WQS for nutrients	Draft final EA due August 28, 2017. Revised drafts due 3 calendar days after receipt of comments from EPA WACOR. Final EA due no later than Dec. 15, 2017.
4.2	EA for Proposed Oregon WQS for aluminum	Draft final EA due August 28, 2017. Revised drafts due 3 calendar days after receipt of comments from EPA WACOR. Final EA due no later than Dec. 15, 2017.

Appendix 1

QA Checklist for Projects Utilizing Existing Data

The items noted in this checklist are adapted from those elements found in *EPA Requirements for QA Project Plans (QA/R-5)* (EPA, 2001a), but tailored to the use of existing data. Page references are from Secondary Data Quality Assurance Project Plan for project entitled: Western States Criteria and Rulemaking Support,” EPA Contract EP-C-12-006, Work Assignment No. 5-13.

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
A1. Title & Approval Sheet							
Project title	X						Page 3
Organization’s name	X						Page 3
Effective date and/or version identifier	X						Page 3
Dated signature of Organization’s project manager	X						Page 3
Dated signature of Organization’s QA manager	X						Page 3
Other signatures, as needed (e.g., EAD Project Officer, EAD QA Coordinator)	X						Pages 3-4
Revision History	X						Page 5
A2. Table of Contents							
Includes sections, figures, tables, references, and appendices	X						Pages 6-7
Document control information indicated (when required by the EPA Project Manager and QA Manager)		X					
A3. Distribution List							
Includes all individuals who are to implement or otherwise receive the QAPP and identifies their organization	X						Page 7
A4. Project/Task Organization							
Identifies key individuals with their responsibilities (e.g., data users, decision makers, project QA manager, Subcontractors, etc.) and contact info.	X						Pages 11

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
Organization chart shows lines of authority & reporting responsibilities	X						Page 11
Project QA manager position indicates independence from unit collecting/using data	X						Page 11
A5. Problem Definition/Background							
Clearly states problem to be resolved, decision to be made, or hypothesis to be tested	X						Pages 7-8
Identifies project objectives or goals	X						Pages 7-8
Historical & background information		X					
Cites applicable technical, regulatory, or program-specific quality standards, criteria, or objectives	X						Pages 7-8
A6. Project/Task Description							
List measurements to be made/data to obtain	X						Page 11
Notes special personnel or equipment requirements		X					Pages 12-13
Provides work schedule		X					Work schedule provided in WA
A7. Overall Quality Objectives & Criteria							
States overall quality objectives and limits needed to support the project goals and objectives cited in Element A5.	X						Page 14
A8. Special Training Requirements/ Certifications							
Identifies specialized skills, training or certification requirements	X						Page 15
Discusses how this training will be provided/the necessary skills will be assured and documented	X						Page 15
A9. Project-level Documents & Records							
Describes process for distributing the approved QAPP and other planning documents (and updates) to staff	X						Pages 15-16

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
Identifies final work products that will result from the project	X						Page 15
Describes the process for developing, reviewing, approving, and disseminating the final work products and individuals responsible for these processes	X						Pages 15-16
B1. Data Needs							
Detailed list/description of the specific data elements needed to support project goals	X						Pages 16-17
Description of the scope of the data elements that you need (e.g., data supporting specific treatment options vs. the full range of options, data supporting the entire country vs. a specific geographic region)	X						Pages 16-17
If project includes development or update of a project database, QAPP identifies and defines each database field	X						Pages 16-17
B2. Potential Data Sources							
Identifies and describes potential sources of the existing data needed (e.g., photographs, topographical maps, facility or state files, census data, meteorological data, publications, etc.) and the rationale for their use	X						Pages 17-18
If literature searches are used, describes the search engines that will be used and key search terms	X						Pages 17-18
If databases or models will be used, describe the database (or model) in terms of who developed it and operates it and the type of data it contains	X						Pages 17-18
For other potential sources, describe the potential sources and rationale for considering or using each one	X						Pages 18 - 19

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
B3. Criteria for Selecting Data Sources							
Identifies each criterion that will be used to determine if the candidate data sources listed in B2 will meet your needs, and how each criterion is defined. (Criteria vary by project; examples include reliability, age, applicability, quantity, format, and others)	X						Pages 18-20
Explains rating system used to evaluate source against each criterion	X						Pages 18-20
B4. Data Value Selection Approach							
For data sources that meet the criteria identified in B3: Describes the criteria and procedures that will be used to determine which value(s) identified in the acceptable sources are most appropriate for use in the project	X						Pages 18-20
For data that do not meet these pre-established criteria but are the only data available, explains how the decision to use such data will be made and documented	X						Page 20
B5. Resolving Data Gaps							
Describes the process for identifying and addressing data gaps that still exist after candidate data sources have been evaluated and appropriate data values have been identified	X						Pages 20
Describes the process that will be used to address any new data needs revealed during the data gathering process (i.e., additional data elements not previously considered)	X						Page 20.

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
B6. Data Gathering Documentation and Records							
Describes how results of the source selection and the data value selection will be documented, including any sources or values that were rejected and the rationale for not using them	X						Pages 20-21 Note – in cases where sources or values were rejected, the EPA WACOR will have the contractor document reasons for rejection.
For data that are deemed acceptable and that will be used, explains how each data element will be associated to its original source citation (i.e., bibliographic information, telephone contact reports, email messages, etc.)	X						Pages 20-21

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
C1. Standardization of Data Elements							
Describes the process to ensure that units and other key measures are captured and standardized (or otherwise made comparable) in the database	X						Page 20
If the project requires that all fields be standardized to a single set of units (e.g., US dollars for economic data, ug/L for chemical data), identifies the standard units that will be required for each data element	X						Page 20
Identifies the procedures for converting data reported in other units to the standardized units, including any rounding or truncating procedures, and procedures for ensuring these conversions are performed correctly	X						Page 20
If standardization of data elements is not needed, explains the process for ensuring that data presented in varying units are comparable enough for use in the project and that project staff members and other data users will be able to readily identify differences in units	X						Page 22 Note -- If standardization of data elements is not needed, the EPA WACOR will ensure that contractor explains the process for ensuring that data presented in varying units are comparable enough for use in the project and that project staff members and other data users will be able to readily identify differences in units.
C2. Data Entry							
Explains the process for manually entering selected data into the project database, who will be responsible for such data entry, and the QC strategies that will be used to ensure that the database accurately and completely captures the data as presented in the original source	X						Pages 20-21

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
C3. Merging or Uploading Electronic Data from Existing Sources							
If data are available electronically and will be uploaded or merged into the project database: describes the procedures that will be followed to ensure that errors are not introduced during the upload/merge process and that the final database reflects the original dataset(s)	X						Pages 20-22
C4. Data Review							
Describes the process for ensuring that the data have been recorded, transmitted, and processed correctly	X						Pages 20-22
C5. Data Storage and Manipulation							
Describes how the existing data will be stored	X						Page 20-21
Describes who will be responsible for access to and maintenance of the stored data	X						Page 20-22
Describes how the existing data will be incorporated with other project data to support the project goal/decision to be made	X						Pages 20-22
Describes the QC strategies that will be employed to ensure that the integrity of the data is not compromised during data storage, access/retrieval, updates, or other manipulation	X						Pages 20-21

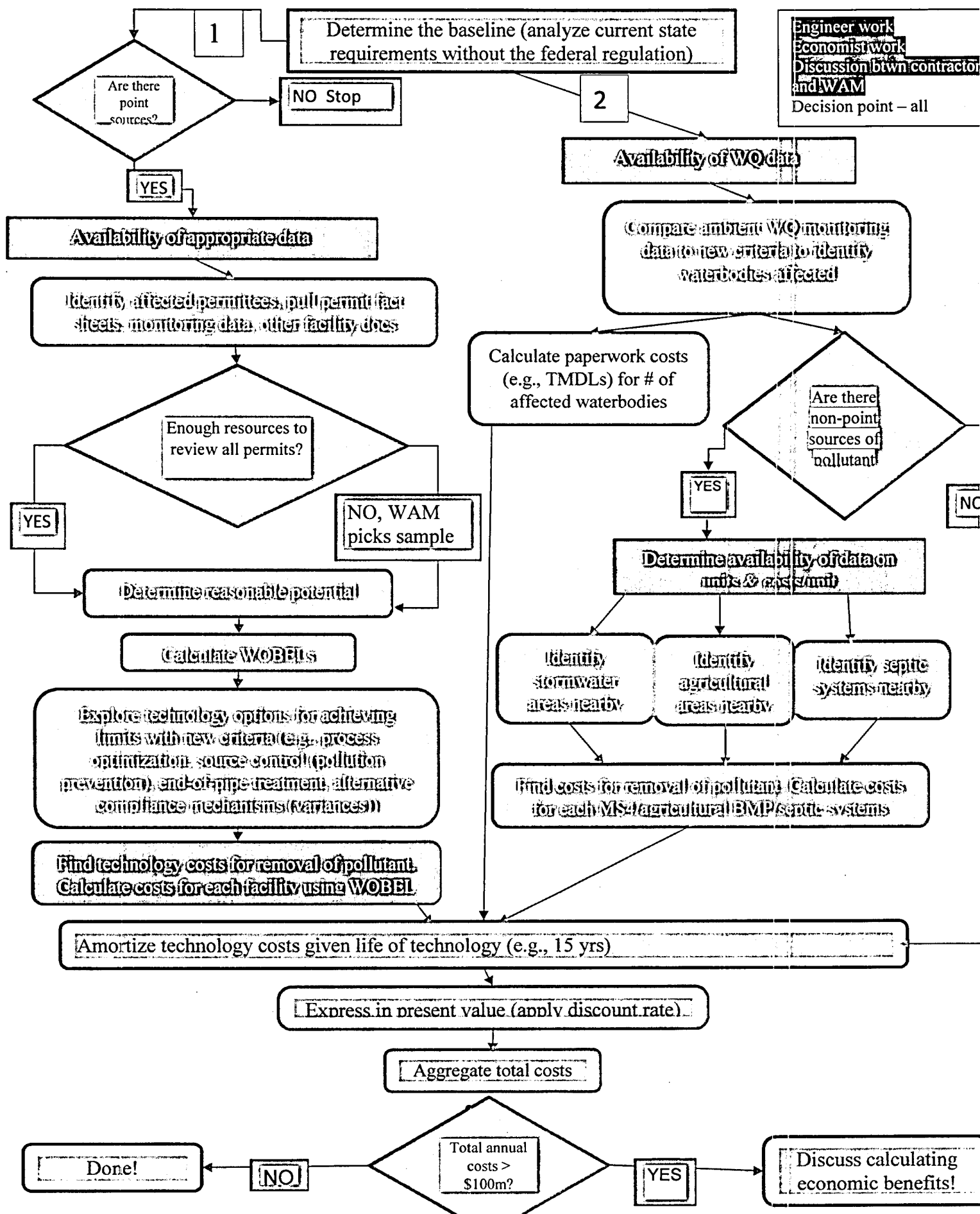
QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
D1. Data Quality Verification and Data Quality Reporting							
Describes the process for verifying that the final set of data meets the overall criteria originally specified for the project	X						Pages 21-22
Describes how these determinations will be documented and reported.	X						Pages 21-22
For data that don't meet the pre-established specifications, explains the process for determining if they are usable and how such decisions will be documented	X						Pages 21-22
D2. Use/Analysis of the Existing Data							
Provides details regarding the exact means in which the data will be used to meet project objectives	X						Page 22
Includes an explanation or list of the information to be calculated and the data elements that will be used to make those calculations	X						Page 22
Includes applicable calculations and equations (if known) or explanations of how they will be developed.	X						Page 22
Includes plans for excluding outliers.	X						
D3. Methodology Documentation and Conceptual Review							
If exact methodologies for analyzing the data will need to be developed or modified during the course of data analysis, explains the process by which such methodologies will be documented, who is responsible for reviewing/ approving their use, and how the methodologies will be checked to ensure they yield the desired products	X						Page 22

QAPP Element	A = Applicable N/A = Not applicable		Covered in PQAPP?	Covered in SQAPP?	Ac = Acceptable NAc = Not Acceptable		Comments
	A	N/A			Ac	NAc	
D4. Technical Review of the Data Analysis							
Describes activities that will be used to ensure the data analyses are being implemented as specified and will support project objectives	X						Page 22
Explains procedures for identifying and notifying appropriate personnel if changes to the originally planned procedures are warranted, and the process for approving, documenting and implementing such changes	X						Page 22
D5. Final Verification of Data Analysis and Reconciliation with User Requirements							
Describes the process for reviewing the final work product to ensure that the work was generated in accordance with the QAPP, and that the work product addresses the overall project goals and objectives	X						Page 22
Describes how the results of this assessment will be documented	X						Page 22
Describes how any limitations of the data or data analyses that were used to prepare the final work product will be documented and communicated	X						Page 22

Appendix 2

Basic Template for Economic Analysis for Water Quality Standards

Note: The color key for the roles and responsibilities of the engineer and economist, and the discussion and decision points, is matched to the background color immediately around the text in each element of the flow chart.



EPA United States Environmental Protection Agency Washington, DC 20460 Work Assignment		Work Assignment Number 4-59								
		<input type="checkbox"/> Other <input type="checkbox"/> Amendment Number:								
Contract Number EP-C-13-039		Contract Period 09/11/2013 To 07/31/2018 Base Option Period Number 4								
Contractor ABT ASSOCIATES INC.		Title of Work Assignment/SF Site Name Development of MCLG for Perchl								
Specify Section and paragraph of Contract SOW A.2										
Purpose: <input checked="" type="checkbox"/> Work Assignment <input type="checkbox"/> Work Assignment Close-Out <input type="checkbox"/> Work Assignment Amendment <input type="checkbox"/> Incremental Funding <input type="checkbox"/> Work Plan Approval		Period of Performance From 08/10/2017 To 07/31/2018								
Comments:										
<input type="checkbox"/> Superfund		Accounting and Appropriations Data								
		<input checked="" type="checkbox"/> Non-Superfund								
Note: To report additional accounting and appropriations data use EPA Form 1900-69A.										
SFO <input type="checkbox"/> (Max 2)										
Line	DCN (Max 6)	Budget/FY (Max 4)	Appropriation Code (Max 6)	Budget Org/Code (Max 7)	Program Element (Max 9)	Object Class (Max 4)	Amount (Dollars)	(Cents)	Site/Project (Max 8)	Cost Org/Code
1										
2										
3										
4										
5										
Authorized Work Assignment Ceiling										
Contract Period:		Cost/Fee:		LOE: 0						
09/11/2013 To 07/31/2018										
This Action:				240						
				240						
Total:										
Work Plan / Cost Estimate Approvals										
Contractor WP Dated:				Cost/Fee				LOE:		
Cumulative Approved:				Cost/Fee				LOE:		
Work Assignment Manager Name Ahmed Hafez							Branch/Mail Code:			
							Phone Number: 202-564-1944			
(Signature) _____ (Date) _____							FAX Number:			
Project Officer Name Ahmar Siddiqui							Branch/Mail Code:			
							Phone Number: 202-566-1044			
(Signature) _____ (Date) _____							FAX Number:			
Other Agency Official Name Nicholas Bisher							Branch/Mail Code:			
							Phone Number:			
(Signature) _____ (Date) _____							FAX Number:			
Contracting Official Name Noelle Mills							Branch/Mail Code:			
							Phone Number: 513-487-2171			
(Signature) _____ (Date) _____							FAX Number:			

WORK ASSIGNMENT

I. **Title:** Development of MCLG for the Perchlorate Rulemaking

Contractor: Abt Associates

Contract No.: EP-C-13-039

II. **Work Assignment Number:** 4-59

III. **Estimated Period of Performance:** Date of Issuance through July 31, 2018

IV. **Estimated Level of Effort:** 240 hours

V. **Key EPA Personnel:**

Work Assignment Contracting Officer Representative (WACOR):

Ahmed Hafez

OGWDW/SRMD (4607M)

202/564-1944

202/564-3758 (fax)

Hafez.ahmed@epa.gov

VI. **Background and Purpose:**

Perchlorate

Perchlorate is an inorganic ion (ClO_4^-) occurring primarily as a salt. Perchlorate occurs naturally in calcium carbonate deposits in arid regions (e.g., parts of the western US) and via atmospheric processes. People are exposed to perchlorate through both food and drinking water. Perchlorate interferes with the thyroid gland by inhibiting iodide uptake. Reduced iodide uptake by the thyroid impacts the amount of thyroid hormones produced. Thyroid hormones are critical for normal growth and development. Poor iodide uptake and subsequent impairment of thyroid function in pregnant women are linked to delayed development and decreased learning capacity in infants and children.

On February 11, 2011 (76 FR 7762), EPA announced its decision to regulate perchlorate based on its finding that perchlorate meets the Safe Drinking Water Act's (SDWA) three criteria for regulating a contaminant:

- Perchlorate may have adverse health effects,
- There is a substantial likelihood that perchlorate occurs with frequency at levels of health concern in public water systems, and
- There is a meaningful opportunity to reduce risk through a drinking water regulation.

In accordance with SDWA, the Agency requested EPA's Science Advisory Board (SAB) to review how to consider available data in deriving a Maximum Contaminant Level Goal (MCLG). The MCLG is a non-enforceable goal defined under the SDWA as "the level at which no known or anticipated adverse effects on the health of persons occur and which allows an

adequate margin of safety.” for a perchlorate National Primary Drinking Water Regulation. The SAB released its final report on May 29, 2013 and recommended that EPA “derive a perchlorate MCLG that addresses sensitive life stages through physiologically-based pharmacokinetic/pharmacodynamic (PBPK/PD) modeling.”

Food and Drug Administration (FDA) and EPA scientists developed a BBDR (biologically-based dose-response) model to determine under what conditions of iodine nutrition and exposure to perchlorate across sensitive lifestages would experience low serum free and total thyroxine (hypothyroxinemia).

EPA began the process of deriving a perchlorate MCLG by linking model output to information from literature to account for adverse health outcomes under WA 4-96 of Abt Contract EP-W-11-003 and WA 3-32 of Abt Contract EP-C-13-039. Under this work assignment the contractor shall continue to assist EPA in the development of the Perchlorate MCLG (not duplicating any work previously completed under WA 4-96 of contract EP-W-11-003 or WA 3-32 of contract EP-C-13-039).

VII. General Requirements of the Work Assignment and Schedule

Confidential Business Information: During the course of the work assignment, the contractor will not be accessing and evaluating CBI.

Budget Reporting: The contractor under this work assignment is required to report to the EPA WACOR and Contract Level Contracting Officer Representative (CL-COR) when 80 percent of the total work assignment funding amount has been depleted. The contractor must also report to the EPA WACOR when 80 percent of the approved Workplan budget has been depleted.

Identification as Contracting Staff: To avoid the perception that contractor personnel are EPA employees, contractor personnel shall be clearly identified as independent contractors of EPA when participating in events with outside parties and prior to the start of any meeting. Contractor personnel are prohibited from acting as the Agency’s official representative. When speaking with the public, the contractor should refer all interpretations of policy to the EPA WACOR.

Limitation of Contractor Activities: The contractor shall submit drafts of all deliverables to the EPA WACOR for review prior to submission of the final product. These drafts will clearly specify the methods, procedures, considerations, assumptions, relevant citations, data sources and data that support any conclusions and recommendations. The contractor shall incorporate all EPA WACOR comments into all final deliverables, unless otherwise agreed upon by the EPA WACOR. The contractor shall adhere to all applicable EPA management control procedures as implemented by the EPA Contracting Officer (CO), EPA CL-COR, and EPA WACOR.

Quick Response: Under this Performance Work Statement the contractor may be required to provide information for use by EPA for quick responses and analyses of options, issues, and policy decisions. Quick responses are those which require completion in one to five working days.

Travel: The contractor shall be required to travel under this work assignment. Travel may be to participate with EPA in on site data collection, in meetings with trade associations, and to meet with EPA to discuss methodology and other important issues associated with the project. A request for approval for any travel directly chargeable to this work assignment must be submitted and approved by the CL-COR before travel begins.

Deliverable Formatting: All memos, draft comments, summaries and responses, and chapters are to be provided in electronic form using Word and/or Excel/Access, ArcView, or, in special cases another software program agreed to by EPA. Memos are to be written in a manner which will make them easy to turn into draft chapters for the Final Report. For deliverables that are in Word or pdf versions of Word documents, that are intended to be shared with management or the public, the contractor shall use decimal align in all tables containing columns of numbers of varying digits, whether decimal places are reported or not. All final materials, e.g., memos, chapters, etc. are to be prepared only after receiving written technical direction from the EPA WACOR and will be formatted to be in compliance with the Section 508 Amendment to the Rehabilitation Act of 1973.

Quality Assurance: Tasks 3-8 in this Work Assignment (WA) require the use of secondary data. Consistent with the Agency's Quality Assurance (QA) requirements, the contractor must prepare a complete Project Specific Quality Assurance Project Plan (PQAPP), to assure the quality of the data used under this WA. Work on this/these task(s) cannot proceed until the contractor receives notification of PQAPP approval from the WACOR via e-mail. The QA requirements must be addressed in the work plan and monthly progress reports as specified under Task 1, below.

VIII. Performance Work Statement

The EPA WACOR will review all deliverables in draft form and provide revisions and/or comments to the contractor. The contractor shall prepare the final deliverables incorporating the EPA WACOR's comments.

Task 1 - Prepare Workplan

The contractor shall prepare a workplan within 15 calendar days of receipt of the work assignment. The workplan shall outline, describe and include the technical approach, resources, timeline and due dates for deliverables, a detailed cost estimate by task, and a staffing plan. In addition, the workplan shall include the requirement that all electronic and information technology (EIT) and all EIT deliverables be Section 508 compliant in accordance with the policies referenced at <http://www.epa.gov/accessibility/>. In addition, the contractor shall prepare a Project Specific Quality Assurance Project Plan (PQAPP), and ensure the quality of secondary data used to complete these tasks. The work plan shall explain when the PQAPP will be submitted based on the specific data requirements of the WA.

The EPA WACOR, the CL-COR and the CO will review the workplan. However, only the CO can approve/disapprove, suggest revisions, or change the workplan. Official revisions will be

given to the contractor by the Contracting Officer. The contractor shall prepare a revised workplan incorporating the Contracting Officer's comments, if required.

A weekly update call with the EPA WACOR and a monthly progress report will be required for this work assignment to discuss progress on deliverables, costs, and other potential issues.

The Monthly Progress Report shall indicate, in a separate QA section, whether significant QA issues have been identified and how they are being resolved. Monthly reports must include a table with the invoice LOE and costs' broken out by the tasks.

Deliverables and schedule under Task 1

1.a. Workplan within 15 calendar days of receipt of work assignment.

Task 2 - Quality Assurance

Tasks 3 in this work assignment require the use of secondary data. Collection, use, and analysis of data will be identical to the procedures described in the Project Specific Quality Assurance Project Plan (PQAPP), completed under task 2 of WA 2-32, consistent with the Agency's Quality Assurance requirements. EPA has determined that this approved PQAPP is appropriate for the tasks outlined in this Performance Work Statement. The work described for Tasks 3 in this work assignment are covered by Task 2 in the original PQAPP (WA 2-32). Based on this determination, the contractor is not required to modify the approved PQAPP for this action. The project specific QA requirements must be addressed in the work plan and monthly progress reports as specified under Task 1.

Deliverables and schedule under Task 2

None.

2.a. PQAPP within 7 calendar days of receipt of work plan approval.

Task 3 – Perchlorate Rule

Task 3.1 – Approach Informing the Derivation of an MCLG for the Perchlorate Rule

The contractor shall update the approach for informing the derivation of an MCLG by linking BBDR model outputs to adverse health outcome information developed as part of the literature review that was conducted under WA 3-32 of Abt Contract EP-W-11-003. Under this work assignment, the contractor shall update the MCLG Approach Report assessing the variation in thyroid hormone levels during pregnancy and at what stages thyroid hormones insufficiency has the largest impact on fetus and childhood neurological development.

Once the EPA WACOR has commented on the approach for calculating the MCLG, the

contractor shall develop a report documenting the complete MCLG development process.

The contractor shall prepare draft deliverable material for EPA WACOR review and approval.

Once the EPA WACOR reviews the draft materials and provides revisions and/or comments to the contractor, the contractor shall prepare a final version of the materials incorporating the EPA WACOR's comments.

Deliverables and schedule under Subtask 3.1

3.1.a. Drafts of the MCLG report due date to be determined (TBD) by written technical direction.

3.1.b. Final Drafts of all MCLG development documents due dates TBD by written technical direction.

Task 3.2 – Development of new methodologies and analyses for the Perchlorate Proposed Rule

Based on the BBDR model data, the literature review of health effect information, and the results of the assessment of thyroid hormone variability and effect in pregnancy, it may be necessary to make changes to the existing methodology or explore new types of analyses (i.e. meta-analysis to inform the development of the MCLG (Task 3.1 above)). The exact nature and timing of these analyses cannot be foreseen at this time. Making changes to existing methodology or exploration of new lines of inquiry will follow the process outlined below: Once the EPA WACOR has commented on the approach for the analyses for informing the development of an MCLG, the contractor shall produce a memorandum documenting the new methodology or analyses for the MCLG development process.

- (1) The EPA WACOR will issue written technical direction to produce a short memorandum, table, or PowerPoint outlining the details of the new analysis required. The length of the document is expected to be less than 5 pages unless otherwise specified in the technical direction.
- (2) Once the EPA WACOR has reviewed the document and a determination is made as to whether to move forward with the changes to existing methods or data or conduct a new analysis (which would give additional insight into and not supplant the original analysis in this work assignment), the EPA WACOR will give written technical direction to the contractor. If it is decided that new methodologies or analyses that were outlined in the documentation provided by the contractor should be conducted, then the technical direction will include any EPA comments to the contractor's proposed analysis and specific deadlines for completion of the work.

Once the EPA WACOR reviews the draft materials and provides revisions and/or comments to

the contractor, the contractor shall prepare a final version of the materials incorporating the EPA WACOR's comments.

3.2.a. Methodology and Data Analysis Memorandum deliverables and due dates TBD by written technical direction. The contractor will normally be given 7 days or more to complete these deliverables.

3.2.b. EPA WACOR approved changes to Methodology and Data Analysis due dates TBD by written technical direction.